The New Brunswick Energy Blueprint

New Brunswick
Department of Energy
October 2011



New Nouveau Brunswick
CANADA

Message from
Hon. David Alward, Premier

October 19, 2011

In our 2010 election platform *"Putting New Brunswick First"*, I made the personal commitment to work with New Brunswickers to implement a new vision for our energy sector.

New Brunswickers responded by offering our team their trust in September 2010, and within days of taking office our Government implemented a three-year electricity rate freeze for NB Power ratepayers and established the New Brunswick Energy Commission. The Commission's mandate was to engage New Brunswickers and, from their input, make recommendations on a progressive energy policy for our province.

We also made a commitment that new energy policies would be the product of open and genuine citizen engagement with all stakeholders; that we would work with our neighbours to better understand how we can best benefit from regional cooperation in electricity generation and transmission; that we would foster the development of green, renewable energy sources; and that we would promote energy efficiency and conservation.

The New Brunswick Energy Blueprint represents our government's response to the work of the New Brunswick Energy Commission and includes a detailed action plan for implementing its citizen-driven priority recommendations.

We continue to listen to New Brunswickers and we are working to faithfully transform the Energy Commission's 10 year vision statement into action:

"To find efficiency in our energy consumption while transitioning toward renewable energy sources at a pace that will keep the price of energy competitive for economic growth and affordable for residents in a reliable and stable system."

I would like to extend our Government's sincere appreciation to the estimated 1,000 individuals who took the time to complete an online survey or personally participate in public dialogue sessions in Edmundston, Campellton, Bathurst, Tracadie-Sheila, Miramichi, Moncton, Woodstock, Fredericton and Saint John. In addition, the Commission consulted directly with 55 different energy, business, labour and environmental groups, and it received 72 different presentations during the public sessions from interested groups and individuals. Their collective input is reflected in the outcomes of the Energy Commission and this Energy Blueprint.

This Energy Blueprint will be our Government's guide to shaping our energy future. I look forward to seeing it implemented over the next three years and to the ongoing contributions of citizens and partners who will enable its success.



Message from Hon. Craig Leonard

Minister of Energy and Minister responsible for NB Energy Efficiency and Conservation Agency

October 19, 2011

On May 24, 2011, the government tabled the final report from the New Brunswick Energy Commission. The report laid out a strategic direction for our province's energy future based on extensive public and stakeholder input.

With this report now in hand and our experiences over the past year as a government to draw upon, now is the time to translate the Commission's policy recommendations into action. *The New Brunswick Energy Blueprint* lays out a 10 year vision for the New Brunswick energy sector and outlines our Government's energy commitments for the remaining three years of our mandate.

Given the constant evolution of this very complex sector, we do not presume to be able to predict the future. We do, however, intend to be as prepared as possible and use the knowledge and tools at hand to lay out a plan for success for this province, its people, its businesses and its industries. We want to be as prepared as possible for both the energy opportunities and the energy and environmental challenges that lay ahead of us.

Our Government was elected to shape a new vision and to execute a strategic plan for the energy sector, and the Energy Blueprint provides the framework to do just that. The Energy Blueprint is based on the hard work of the Energy Commission and input from a wide cross-section of New Brunswickers and key regional energy stakeholders. It takes the 67 recommendations of the Commission and integrates them into 20 key action items that will be implemented before the end of our government's current mandate. We will also report annually on our progress in implementing this new vision.

The Energy Blueprint draws on what we have heard and learned from New Brunswickers through the Energy Commission, the energy sector knowledge and experience within the government of New Brunswick, and best practices from throughout the region and around the world. You have spoken, and we have listened.

In addition to being a plan for the future, the Energy Blueprint and the work of the Energy Commission is meant to help New Brunswickers cut through the myths and misinformation that exist about many energy issues in this province. While challenges exist, there are many positives in the energy sector and we must build upon those successes. This document lays out the steps we recommend to ensure our province and citizens enjoy stable, secure and cost-effective access to the energy required to support our economy and society, to protect our environment by using less energy and to maximize the energy potential that exists today for the benefit of all our people.

We look forward to working with New Brunswickers in implementing *The New Brunswick Energy Blueprint*.



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Introduction

Energy touches every aspect of our lives, and in ways that we largely take for granted. All activities, however small or large, involve the conversion of energy from one form to another. At the flick of a switch, we have light to read and heat to cook. We communicate electronically around the globe. We travel to work and visit other regions. Energy surrounds us. The sun warms, triggers photosynthesis and provides the essentials of life and mobility.

Societies are shaped by their access to energy sources and technologies used to transform energy to its end uses. Economic value depends to a large extent on our ability to harness energy for productive purposes. New Brunswick was built on natural resource-based industries, including fishing, forestry, agriculture, mining, shipbuilding and resource-based manufacturing. Over the years, New Brunswick governments and industry developed energy policies and systems to ensure that personal and economic energy needs were met through complex, diverse and reliable systems of production, generation, transportation and delivery. Economic value has also been derived from our ability to produce competitive energy for export, taking advantage of our resources and geographic location.

Conventional energy sources have shifted over time. Until the late 1800s coal, biomass and wind supplied much of the world's energy for heat, production and shipping. Oil and natural gas are now dominant sources of energy, with coal, hydro, nuclear and renewable resources adding to the mix of primary sources. Many of our key energy choices are driven by supply and demand economics which are affected by multiple global and local factors, including government policies, emerging technologies, economic development, the weather and world events, to name a few. In a free market economy, price volatility and dynamic energy markets are inevitable and largely uncontrollable by any single jurisdiction.

It is likewise impossible to predict the long-term path of energy markets, and how they may affect New Brunswick's energy outlook. The unexpected growth of natural gas supply in North America in the past several years, and its impact on electricity prices, is an example of how energy markets take unexpected and fundamental turns. Another key factor is the growing concern about fossil fuel energy, its effect on greenhouse gases and how governments around the world are seeking to address the issue.

With this background, what role can government play to affect energy policy for the benefit of our economy, our environment and New Brunswick society? To assist in answering this question, the Province of New Brunswick established an Energy Commission to seek the views of New Brunswickers. In its Final Report, the Commission outlined *five key objectives* that summarized the views of those who participated in the public engagement process. They are:

1. Low and Stable Energy Prices
2. Energy Security
3. Reliability of the Electrical System
4. Environmental Responsibility
5. Effective Regulation

The New Brunswick Energy Blueprint is the result of government's review of the Final Report of the Energy Commission. The Key Energy Objectives section of the Energy Blueprint contains a detailed review of the five objectives. Each objective is considered in terms of:

- why the objective is important to New Brunswick;
- how we are currently making progress;
- our vision of achieving the objective; and
- action items linked to the objective.

The Energy Action Plan section of the Energy Blueprint takes the 67 recommendations of the Energy Commission and integrates them into a comprehensive list of 20 government actions for the energy sector for the next three years. So, while the vision of each objective is a long-term view, each action item is a specific goal that government has set out to implement within the next three years, and which will contribute to one or more key objectives.

There are many approaches that government can take to shape our energy future for the benefit of our economy, our environment and our society's well-being. They include:

- restructuring NB Power to promote greater efficiency and transparency in its operations;
- achieving greater efficiency of energy use;
- enhancing our ability to transition away from fossil fuels and towards stable priced fuel generation to reduce market risk;
- ensuring that our energy markets are efficient and well regulated;
- working towards more inter-governmental cooperation in terms of policies and projects;
- optimizing our strategic advantages in regional energy markets;
- fostering innovation and improved energy technologies and;
- an on-going commitment to public, stakeholder and New Brunswick First Nations dialogue regarding energy issues, opportunities, challenges and solutions.

The Energy Blueprint is both a long-term vision and a three year action plan to work towards the objectives that were identified through the public engagement process of the New Brunswick Energy Commission. The road ahead is complex, and this will be government's guide to shaping our energy future.

Key Energy Objectives

1. Low and Stable Energy Prices

Importance to New Brunswick

The Energy Commission identified low and stable prices or rates as one of five key energy objectives for New Brunswick. Low and stable energy prices have a direct impact on total energy costs, which have a dramatic effect on business and personal finances. They influence the competitiveness of businesses and determine the amount of disposable income for consumers to invest, save or spend on other goods and services. Energy costs are determined by the price per unit (including delivery charges) and the quantity consumed. Thus to reduce energy costs, one can either reduce the price per unit or minimize consumption.

We are exposed to the price component of the cost of energy directly through the prices we pay for electricity, natural gas or gasoline. We are also exposed indirectly through the prices we pay for all other goods and services, each of which has an energy cost component that is passed on to the consumer.

Fuels such as oil, coal and natural gas are free market commodities, actively traded on continental and global markets. As a result, Government has little or no ability to control these prices. The costs of these inputs are in turn reflected in the price of petroleum products, natural gas and in much of our thermally generated electricity. Imported electricity is also a market traded commodity and its price is also based on supply and demand, or economic conditions in jurisdictions other than our own.

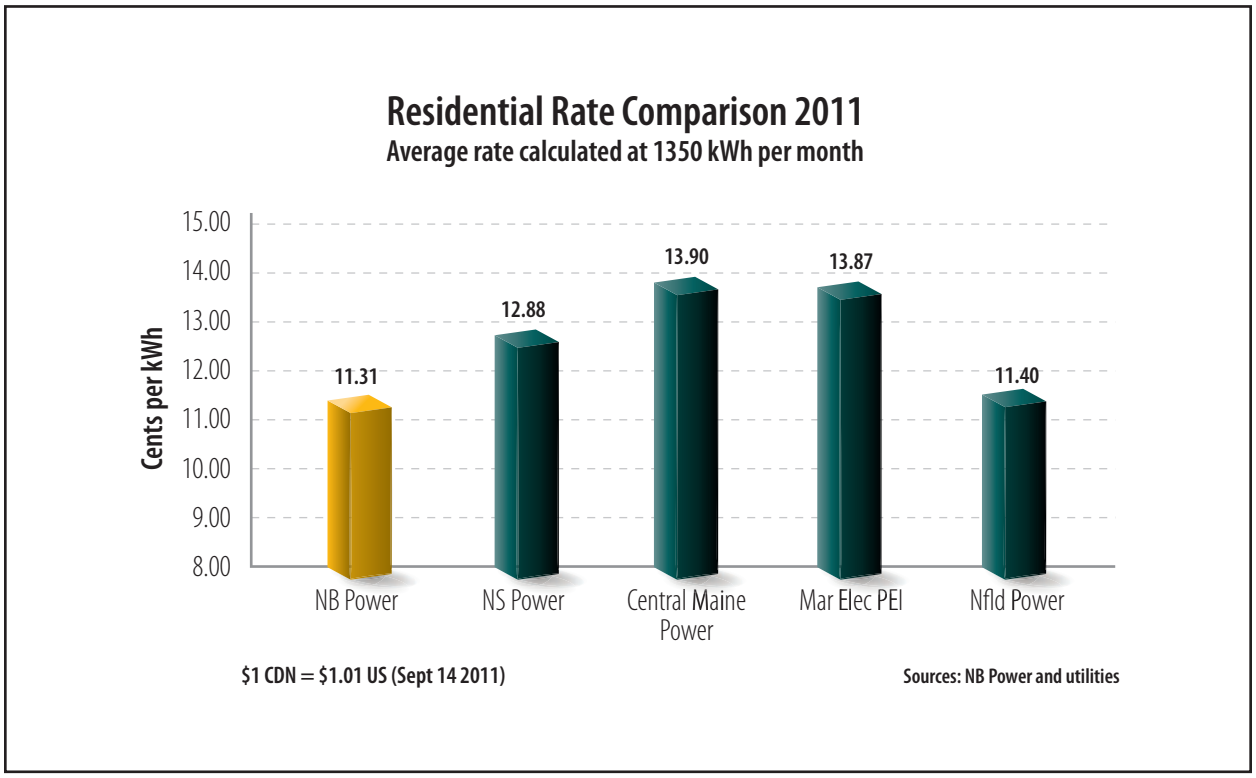
There are areas, however, where government can affect the end price of energy. In the case of NB Power, a Crown corporation, Government can ensure that it is run efficiently under the right structure and with the proper mandates in order to reduce the cost of electricity to customers. Utilities such as Enbridge Gas New Brunswick - which holds the natural gas distribution franchise in New Brunswick - and NB Power must appear before the New Brunswick Energy and Utilities Board (EUB) to justify distribution rates to customers and ensure they are fair and reasonable. The EUB also administers weekly petroleum price regulation to ensure price stability and fairness. The objectives of government policy, therefore, are to keep energy prices as low as possible over time, to act as a buffer, where possible, to avoid price shock from volatile commodity prices, and to maintain competitive rates as compared with peer jurisdictions.

Although it is impossible to isolate New Brunswickers from the impacts of variable energy prices and global energy market dynamics, our Government remains committed to implementing energy policies that add efficiency to our Crown electric utility and electricity market, and add transparency to consumer petroleum product prices. Our Government's commitment to low and stable energy prices will have a particularly favourable impact on low and fixed income New Brunswickers, where energy costs account for a much higher proportion of household expenditures.

Current Progress

Electricity - NB Power is well-positioned to continue to serve our province reliably and cost-effectively for many years to come. No significant capital expenditures to replace or refurbish our current electricity infrastructure are expected for the next decade. The diverse nature of our generating assets and our efforts to find efficiencies and other ways to reduce costs will help to keep future rates stable.

NB Power operates a diverse mix of generating stations that draw energy from a variety of sources, including hydro, nuclear, coal and oil. In addition, NB Power has supply contracts with other generators in our province who provide electricity from natural gas, wind, biomass, bio-gas (primarily from landfills) and solar energy. Electricity is also available to New Brunswickers from neighbouring jurisdictions through a number of interconnections with Quebec, Nova Scotia, PEI and New England.



This diversity of supply allows NB Power to use less expensive sources of energy when other fuels or supplies experience price increases. For example, when the price of oil escalates, more energy can be generated from coal or hydro, or even purchased from our neighbours. This helps to keep costs down and rates stable.

NB Power's diverse generating fleet will allow it to procure an increasing amount of our electricity from generators powered by nuclear, hydro, wind, biomass and other clean energy sources. When the Point Lepreau Nuclear Generating Station returns to service in 2012, as much as 65 percent of the electricity used in New Brunswick will come from these and other clean, renewable or non-emitting sources. The benefit is that the cost of production will not be as dependent on volatile fossil fuel prices, but rather on relatively stable and, in the case of certain renewables, no-cost fuel sources.

Petroleum Products - New Brunswick has enjoyed consistently low gasoline prices, compared to Canadian average prices. This is mainly due to our relatively low provincial gasoline taxes, but studies have also shown that price regulation has had a moderating effect on prices.

Retail petroleum product prices (most notably gasoline and heating oil), are determined by a complex set of factors, most of which are market driven. In 2006, the Province introduced the *Petroleum Products Pricing Act*, which allocates a maximum retail price for gasoline, diesel, heating oil and propane used for heating. The main purposes of price regulation are to reduce daily pump price volatility and to reassure consumers that regulated prices are based on a transparent and non-discretionary formula. This achieves a fair balance between low, stable prices and ensuring that wholesalers and retailers are able to recover fair margins and delivery costs on their sales.

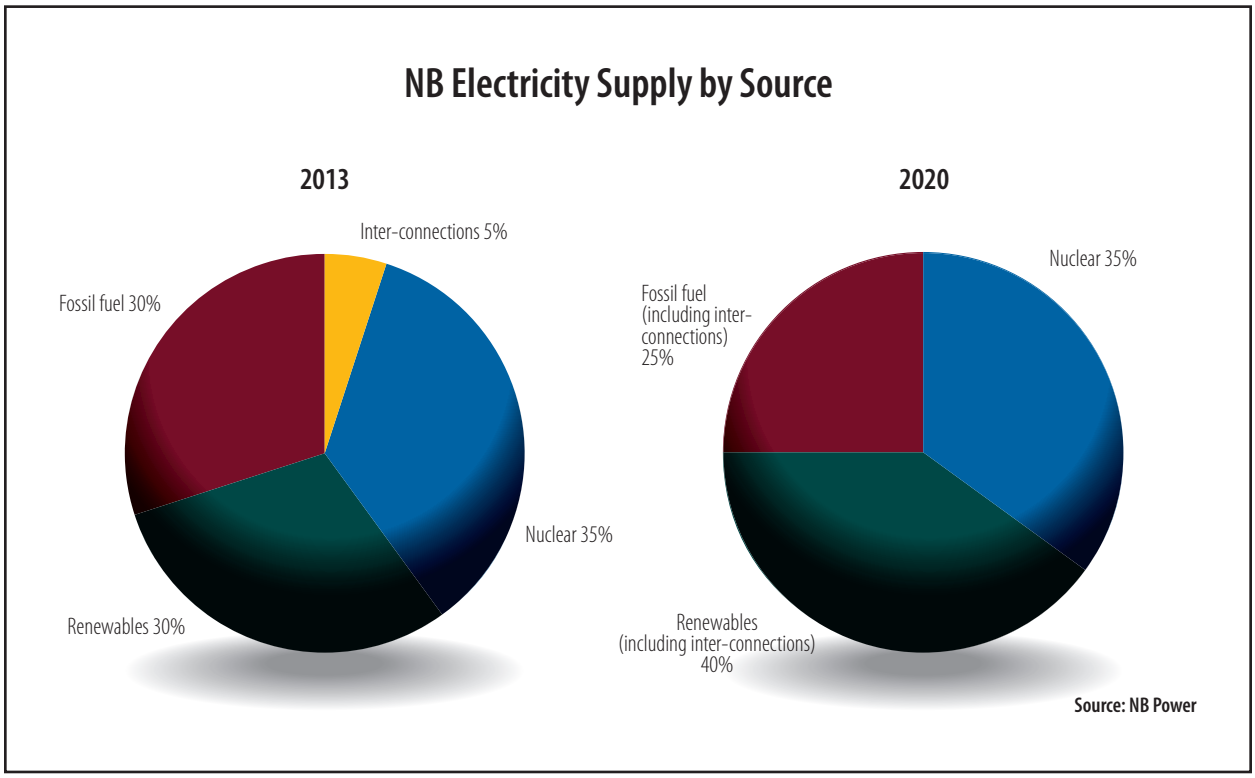
The other strength of New Brunswick's price regulatory framework is that it retains the ability of retailers to compete for a share of the consumer market and encourages efficiency and innovation in retail markets. Retailers often price their petroleum below the regulated maximum to attract customers.

Natural Gas - The abundance of natural gas in North America has led to low commodity prices, especially in the past few years. For natural gas consumers in New Brunswick, however, high distribution costs have been a cause for concern. While there is no doubt that distribution charges in New Brunswick are high and must be addressed, the current rate framework is designed to ensure that natural gas consumers achieve target savings (20% for residential customers) compared to heating oil or electricity. It is also a positive sign that the utility regulator, the New Brunswick Energy and Utilities Board (EUB), has embarked on a series of processes which are intended to bring lower and more cost-relevant distribution rates to the system.

Energy Efficiency - Since 2005, Efficiency NB has been dedicated to advancing energy efficiency by providing opportunities for New Brunswick homeowners and businesses to reduce their energy costs. It has enabled an industry geared towards energy efficiency services including specialized advisors, designers, contractors and trades people.

A Vision for the Future

Electricity - NB Power will remain a Crown Corporation owned by the Province of New Brunswick. However, the utility will be renewed and re-organized as a vertically integrated electric utility with a mandate to operate on a commercial basis in a market structure that appropriately reflects New Brunswick's unique opportunities and limitations. This will ensure it provides reliable service to New Brunswick families and businesses while focusing on debt reduction, efficient operations and stable rates.



A focus on energy efficiency and demand side management will contribute to lower customer energy costs. A diverse fleet of generating facilities will be made less dependent on volatile fossil fuels prices as we move toward procuring at least 75 percent of our electricity from more stable priced clean, renewable or emission-free sources by 2020.

Petroleum Products - A comprehensive review of the petroleum price regulatory framework will result in renewed public and industry confidence in the effectiveness and relevance of price regulation. This will ensure the policy goals of market efficiency and the lowest possible price for consumers, while ensuring price stability. The new regulatory framework will be flexible enough to recognize and adapt to emerging trends in petroleum marketing.

Natural Gas – An expedited transition from the current market-based rate model towards a cost-based rate model of natural gas distribution with improved access will be examined. The goal will be a new model that is more comparable with mature natural gas distribution models throughout North America. Low and stable gas distribution rates will be achieved through a combination of adjustments to the regulatory framework, and through system growth by greater adoption of natural gas as a competitive source of energy for consumers, businesses and industry.

Energy Efficiency – A priority will be placed on expanding energy efficiency programs and reducing the demand for energy. More efficient use of current energy sources is generally a less expensive option than building or procuring new supply for future energy demands. Over time, this will lead to a continued improvement in the affordability of energy for residents and the competitiveness of industry.

Energy Action Plan Items linked to this Objective

To achieve this objective, New Brunswick will pursue the following Energy Action Plan items:

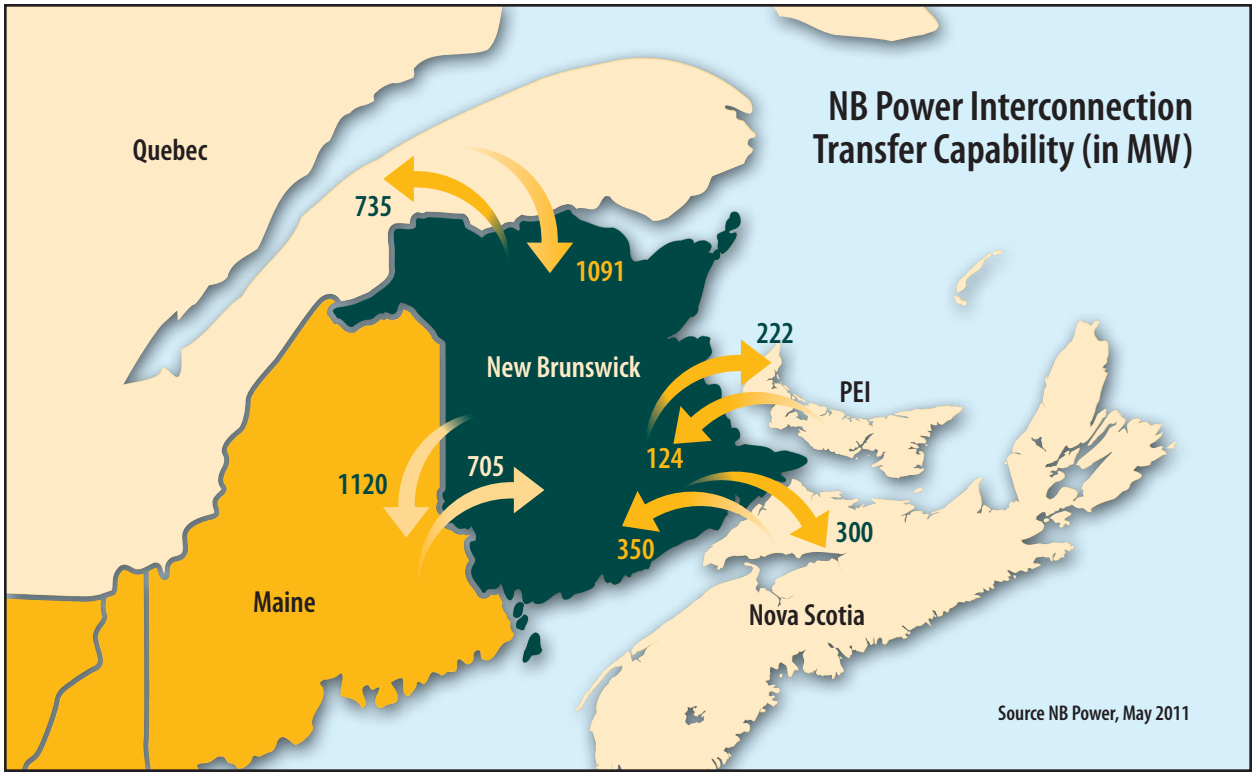
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2. Electricity Market and New Brunswick System Operator
3. NB Power – Debt Management Plan
4. NB Power – Regulatory Oversight and Integrated Resource Plan
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7. Large Industrial Renewable Energy Purchase Program
8. Renewable Portfolio Standard
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16. Petroleum Products Pricing
18. Office of the Public Energy Advocate
19. Energy Literacy, Education and Skills Development
20. Energy Research and Development

2. Energy Security

Importance to New Brunswick

Energy security is about ensuring that New Brunswick has access to energy supplies that are essential to our daily lives and economic activity. Although the threat of supply shortages has rarely surfaced in New Brunswick, global supply and demand factors, particularly in relation to crude oil prices, can have significant impacts on short and long term energy costs in New Brunswick.

In terms of our electrical grid, security means ensuring that New Brunswick optimizes generation capacity using indigenous and domestic sources, such as hydro, wind and nuclear, while minimizing reliance on imported fuels for generation, such as oil and coal. Security also refers to ongoing and reliable access to electricity imports, for both short term and long term requirements.



In addition, energy security is achieved by reducing overall demand for power - through demand side management and energy efficiency programs - and reducing exposure to external market risks. Energy security includes a commitment to ensuring that New Brunswickers receive fair and reasonable treatment from their electric utilities, including winter disconnect policies. Security can also refer to the reliability of the electrical grid, which is discussed in the next section.

Energy security is enhanced by ensuring a diversity of energy sources and the ability to migrate from one source to another. For example, sustained high oil prices may eventually cause a greater shift to other forms of energy for transportation and alternate sources for home heating.

Current Progress

New Brunswick is fortunate to have a secure supply of energy. We currently have sufficient capacity to meet our peak electricity demand requirements, and most of the electricity we use is generated from domestic and indigenous sources such as hydro, wind, biomass and nuclear. This reduces our reliance on imported fuels and our susceptibility to volatile fuel prices.

Access to natural gas in New Brunswick comes from multiple sources. The Sable Offshore Energy Project (SOEP) has supplied offshore domestic gas to New Brunswick via the Maritimes & Northeast Pipeline (M&NP) since 1999. This has since been joined by a supply of indigenous onshore gas from the McCully Field, located in the Sussex region, and by liquefied natural gas imports into the Canaport LNG terminal in Saint John. Finally, our connection to the vast natural gas network in the eastern United States via the M&NP allows us to import gas into the province in the event that our other sources are unable to meet the New Brunswick natural gas load demand.

New Brunswick will continue to require oil imports, particularly for transportation, industrial processing and space heating. Our supply of refined petroleum products comes mainly from Canada's largest refinery located in Saint John, which has been in continuous operation and a secure source of petroleum products since 1960. It produces gasoline and other products for both domestic and export markets. New Brunswick also has regular access to petroleum supplies from other refineries in Nova Scotia and Quebec.

Aspects of energy security that have gained, and will continue to garner, increased prominence in our society are risk assessment and management, and Critical Infrastructure Protection (CIP). Increasing and more complex threats to energy systems from natural and deliberate acts require action by governments and owners/operators to ensure economic and public safety risks are managed. These threats must be balanced against multiple demands, including pressures to keep energy costs low for domestic and export markets.

In order to proactively address risk and security issues in our energy sector, the Province has formed an Energy Sectoral working group on CIP under the lead of the Department of Public Safety (DPS). This group comprises representatives from DPS, the Department of Energy, Public Safety Canada, policing and intelligence services, NB Power and the municipal electric utilities, and the major private sector energy companies operating in New Brunswick. Each of these organizations has its own security and risk management programs in place, and involvement with the Energy Sectoral CIP group allows for efficient communication of potential risks and threats as well as providing a forum to discuss industry best practices and opportunities for improvement in areas of risk assessment and security.

A Vision for the Future

Under a scenario where global energy prices continue to rise and are subject to volatility, New Brunswick will reduce its reliance on imported fuel sources for electricity generation and home heating, replacing it with a greater reliance on domestic energy sources, including renewable energy and natural gas. Efficiency programs will also serve to reduce our dependence on foreign energy. Government will continue to work closely with our federal partners and industry stakeholders to ensure our critical energy infrastructure and supply channels in New Brunswick remain as secure as possible.

Energy Action Plan Items Linked to this Objective

To achieve this objective, New Brunswick will pursue the following Energy Action Plan items:

4. NB Power – Regulatory Oversight and Integrated Resource Plan
5. Regional Electricity Partnerships
8. Renewable Portfolio Standard
9. Future Development of our Renewable Energy Resources
10. Wood Based Biomass Resources
12. Electricity Efficiency Plan
13. Energy Efficiency Building Code Standards
14. Energy Efficient Appliances and Equipment
19. Energy Literacy, Education and Skills Development
20. Energy Research and Development

3. Reliability of the Electrical System

Importance to New Brunswick

Society has evolved to a point where we are truly dependent on the supply of electricity. Electricity refrigerates and cooks our food, powers our schools and hospitals, lights our buildings and streets, pumps our gas, enables electronic commerce, enables our ability to communicate via telephone, internet and television and is integrated into the supply of food and water. Electricity powers and controls our factories, mines, mills, warehouses and places of business. Increasingly, electric power is also powering our vehicles. It is, therefore, essential that our electric system be reliable to ensure we have enough electricity at all times, and that it is available instantly when and where we need it.

Current Progress

New Brunswick enjoys a diverse fleet of strategically located, modern, well-maintained generating stations as well as a number of electrical interconnections with our neighbours. This ensures an uninterrupted supply of electricity should reliability issues arise in a particular area of the province or with a particular fuel type or generating station.

NB Power maintains the capacity to generate more electricity than our maximum usage demands, further ensuring sufficient supply. Our transmission grid, which loops around the province, allows NB Power to supply almost any point on the transmission system from either direction should an interruption occur. NB Power's robust electric transmission and distribution networks have historically enjoyed above average reliability statistics.

To ensure the reliability of our electric system is maintained, New Brunswick adopts and enforces mandatory reliability standards in conjunction with the North American Electric Reliability Corporation (NERC).

A Vision for the Future

New Brunswick will continue to have a modern, well-maintained and efficiently operated electric system which supplies New Brunswick homes and businesses in a reliable manner. Through careful and continuous planning, preventative maintenance, support for efficiency and demand side management, and adherence to industry-leading reliability standards, New Brunswickers will continue to enjoy the high quality electric service we have come to expect and rely on. Through enhanced agreements with our neighbours, certain reliability elements will be shared in a manner that increases system reliability while stabilizing costs to ratepayers.

Energy Action Plan Items linked to this Objective

To achieve this objective, New Brunswick will pursue the following Energy Action Plan items:

2. Electricity Market and New Brunswick System Operator
4. NB Power – Regulatory Oversight and Integrated Resource Plan
5. Regional Electricity Partnerships
6. Smart Grid Technology and Innovation
12. Electricity Efficiency Plan
13. Energy Efficiency Building Code Standards
14. Energy Efficient Appliances and Equipment
20. Energy Research and Development

4. Environmental Responsibility

Importance to New Brunswick

In addition to the essential and obvious need for a healthy environment, our province's environmental stewardship affects how competitive we are in attracting investment, marketing goods and services, and economic development. There is a growing demand for businesses to address the environmental sustainability of operations and supply chains, including such factors as carbon intensity, land and water management, and social acceptability.

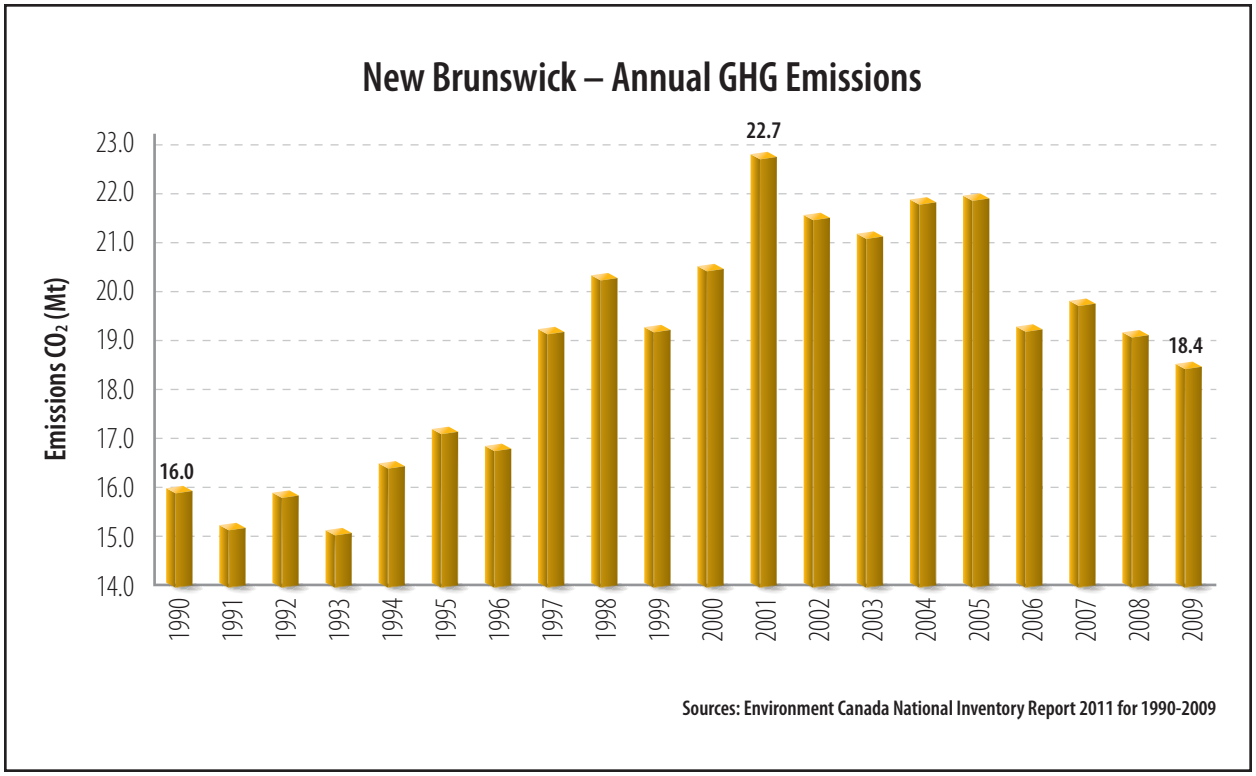
A key environmental indicator is the level of greenhouse gas (GHG) emissions, a main component of which is carbon dioxide. In New Brunswick, energy use is responsible for 92 percent of GHG emissions. Energy policy is therefore closely tied to our carbon footprint. Our province must do its part to reduce GHG emissions and remain competitive.

New Brunswick's economy is highly reliant on industries that are heavy energy users and also export oriented. Reducing our environmental footprint will help our exporters remain competitive in a world that is increasingly environmentally conscious. Energy policy must be directed at mitigating the risk that our industries may lose their competitive position in markets that account for environmental responsibility, particularly with respect to GHG emissions.

In addition to risk mitigation, there are opportunities that flow from environmental leadership. There is greater recognition within our business community of the economic advantages of environmental sustainability and reducing GHG emissions. Our energy and environmental policies and practices can lead to more employment opportunities and economic growth. Energy efficiency programs offer one example of how sound environmental policies can spur local investment. As investments in energy efficiency are made, jobs are created for New Brunswickers in retrofitting and refurbishing existing houses and commercial buildings. In addition, when companies reduce their energy consumption and related energy costs, they have greater financial flexibility to invest in their operations, and improve their overall competitiveness.

Current Progress

The Province of New Brunswick has implemented a number of regulatory measures and agreements which have resulted in reducing air contaminant emissions at our industrial and commercial facilities. All new development projects are subject to emissions standards and review processes, which are continually being upgraded. Also, we are presently on track to meet our provincial greenhouse gas targets. This progress on climate change sets the foundation for the 2012 - 2020 planning period and clarifies actions needed to address future challenges.



New Brunswick is making significant progress toward low carbon electricity generation. When the Point Lepreau Nuclear Generating Station returns to service in 2012, approximately 65 percent of the electricity we produce and use will come from clean, non-emitting or renewable energy sources.

Efficiency NB has a strong reputation as an agency with the know-how and capacity to deliver cost-effective energy efficiency programs. Throughout the industrial, commercial, residential and transportation sectors, energy efficiency has great potential to significantly reduce our energy costs and lower our carbon footprint.

Our province's location and strong interconnections with neighbouring jurisdictions allow access to clean energy sources such as hydro electricity and natural gas, and provide electrical load balancing opportunities to help develop more renewable energy resources.

A Vision for the Future

It is likely that carbon emissions will have an associated cost in the future while, at the same time, fossil fuels will also likely increase in price. Both situations provide ample reason to ensure we have the ability to shift away from volatile fossil fuels to more stable priced fuel sources. As a result, energy efficiency, renewable and non-emitting energy, and cleaner alternative fuels will have an increased role in our energy profile.

Led by the Department of Environment and in collaboration with other government departments, stakeholders and industry, a new 2012-2020 NB Climate Change Action Plan is under development. The Plan will identify a number of initiatives in the areas of energy use, transportation, waste management, industrial sources, partnerships and communication. The plan will play a leading role in New Brunswick achieving its current target of reducing GHG emissions to 10 percent below 1990 levels by 2020.

Energy Action Plan Items linked to this Objective

To achieve this objective, New Brunswick will pursue the following Energy Action Plan items:

4. NB Power – Regulatory Oversight and Integrated Resource Plan
5. Regional Electricity Partnerships
6. Smart Grid Technology and Innovation
7. Large Industrial Renewable Energy Purchase Program
8. Renewable Portfolio Standard
9. Future Development of our Renewable Energy Resources
10. Wood Based Biomass Resources
11. Energy and Climate Change
12. Electricity Efficiency Plan
13. Energy Efficiency Building Code Standards
14. Energy Efficient Appliances and Equipment
19. Energy Literacy, Education and Skills Development
20. Energy Research and Development

5. Effective Regulation

Importance to New Brunswick

The New Brunswick Energy and Utilities Board (EUB) provides regulatory oversight over electricity, natural gas distribution and pipeline projects, and administers the price regulation of petroleum. Its mandate is to serve the public interest, especially in relation to customer tolls and rates. This requires a balance between the interests of ratepayers and utilities, to ensure just and reasonable rates while allowing the utilities the opportunity to maintain sustainable operations.

Strong and effective regulation of utilities is essential to ensure that energy charges to customers are justified in a transparent and open process. Large business customer classes are often represented at such proceedings. As part of the regulatory process, it is also important that the interests of residential and small commercial customers are properly represented by an advocate who is experienced in energy regulatory matters.

Current Progress

The historical roots of the EUB go back to 1910. It operates independently from government and follows a formal process that allows interested parties the opportunity to be heard. This removes the decision-making power from government departments and places it in the hands of a board whose members and staff have the independence, expertise, experience and discretion to make balanced decisions in the public interest.

The Board plays a fundamental role in the regulation of NB Power's distribution rates and in natural gas distribution rates. The EUB also receives applications for the construction and operation of intra-provincial pipelines and its Pipeline Safety Division ensures compliance with pipeline standards. The Board also regulates the motor coach industry and inter-city bus service. Finally, it administers the regulation of petroleum prices under the *Petroleum Products Pricing Act*.

The Board manages a full slate of regulatory matters with only two full-time Board members, eight part-time members, and about thirteen full-time staff. Its annual operating costs of approximately $2.5 million are funded by the industries it regulates by way of levies and fees.

A Vision for the Future

In a regulatory environment that is increasingly complex and demanding of the regulator's time and resources, a shift to full-time Board members will be able to more efficiently manage its regulatory and administrative processes and schedules. Decision making panels would have the full and consistent background knowledge and experience needed to deal with complex energy issues.

A public energy advocate would offer full-time and effective representation of small-scale customer classes in relation to utility rates and services. There will be an equitable and accountable method of allocating the costs of this office to those utilities whose regulatory activities create the need for consumer advocacy.

Energy Action Plan Items linked to this Objective

To achieve this objective, New Brunswick will pursue the following Energy Action Plan items:

1. Reintegration of NB Power
4. NB Power – Regulatory Oversight and Integrated Resource Plan
15. Natural Gas Distribution Rates
16. Petroleum Products Pricing
17. Energy and Utilities Board
18. Office of the Public Energy Advocate
19. Energy Literacy, Education and Skills Development

Energy Action Plan

As stated in the Introduction, *The New Brunswick Energy Blueprint* is both a 10 year vision and a 3 year action plan. The previous section outlined the five key objectives that form the vision for the energy sector in New Brunswick for the next decade. This section – the Energy Action Plan – takes the 67 recommendations of the Energy Commission and integrates them into a comprehensive list of 20 government actions for the energy sector for the next three years. Each of these action items contributes directly to the five key energy objectives outlined in the section above.

1. Reintegration of NB Power

Description and Background

The Province of New Brunswick will amalgamate the NB Power group of companies into a single vertically integrated Crown utility.

In October 2004, the *Electricity Act* divided NB Power into five separate companies, providing a legal and financial structure to support a decentralized organization. These companies were NB Power Holding Corporation (Holdco), NB Power Generation Corporation (Genco), NB Power Nuclear Corporation (Nuclearco), NB Power Transmission Corporation (Transco) and NB Power Distribution and Customer Service Corporation (Disco). In addition, Genco had two subsidiary companies: NB Power Coleson Cove Corporation (Colesonco) and NB Coal Inc. (now known as Mine Reclamation Inc.).

New Brunswick Electric Finance Corporation (EFC) and the New Brunswick System Operator (NBSO) were also created as independent organizations. EFC was created, in part, to take on a portion of NB Power's debt in order to reduce debt levels in the NB Power companies to a more commercially appropriate level. The NBSO was created to maintain the adequacy and reliability of the integrated electricity system and to facilitate the operation of a competitive electricity market in New Brunswick.

Within this organization, Transco is the only subsidiary with a commercial capital structure that includes debt and equity – the remainder of the utility has no equity and meets its capital financing requirements entirely through debt. Transco generates revenue from the Open Access Transmission Tariff (OATT), which is regulated by the New Brunswick Energy and Utilities Board (EUB).

What is "OATT"?

The Open Access Transmission Tariff (OATT) provides the foundation for the basic conditions and rates for use of the transmission system. The New Brunswick System Operator is currently responsible for seeking revisions to the OATT. All revisions must be approved by the NB Energy and Utilities Board (EUB) and are subject to public scrutiny.

Disco is the only other NB Power company that is regulated. This means that much of NB Power's operations – including all of its generating facilities and most of its head office activities – are not subject to regulatory oversight and scrutiny.

At the time of reorganization, an interim governance structure was established with the NB Power companies sharing a common Board of Directors and a common President/CEO. The plan was that this structure would evolve as the competitive electricity market evolved and separate Boards and CEOs would be established for each NB Power company.

The landscape has changed since 2004. In particular, the competitive market has not developed in New Brunswick as anticipated - and given what has occurred in British Columbia, Ontario and elsewhere where competitive electricity markets have also failed to thrive - there is little likelihood that it will happen. Across the country, new generation assets have not been built by private sector market participants to the extent predicted upon adopting a competitive electricity market model. Developers have found it very difficult to secure financing for new projects because financial institutions and other investors will not finance an independent power project without a long-term utility power purchase agreement in place as a secure source of future revenues. New generating facilities are often not cost competitive with existing or heritage assets, as the current construction costs must be factored into the price of their electricity.

For a variety of reasons, including the fact that the competitive electricity market has failed to develop in New Brunswick as anticipated, the interim NB Power governance structure remains in place. A common Board of Directors and a common President/CEO continue to make decisions in the best interest of customers based on NB Power as a single entity.

In order to improve transparency and the opportunity for meaningful cost reductions, NB Power will be reintegrated into a vertically integrated utility and the *Electricity Act* will be updated to reflect this simplified structure. In addition, Government will review New Brunswick's electricity market policies and implement structural and operational changes to improve efficiencies and cost effectiveness, including the reintegration of the system operation functions of the NBSO within NB Power.

The major elements of the proposed new NB Power structure include:

1. The Customer Service business unit will be comprised of Disco and Transco.
 a. *Transmission revenue requirement will be separated from the consolidated NB Power and submitted and reviewed by the EUB as required, in order to maintain compliance with U.S. Federal Energy Regulatory Commission (FERC) rules for exporting electricity to the United States.*
 b. *The Transmission business will be granted a deemed capital structure with a regulated rate of return on transmission equity (ROE). A ROE greater than the current range of 8.5 percent to 10.5 percent will be requested for new interconnects in order to maximize the advantage we enjoy from New Brunswick's geographic location as an energy hub in the international northeast region.*
2. The Generation business unit will be comprised of Nuclearco and Genco.
3. The Corporate Services unit will be comprised of activities such as Human Resources, Corporate Relations and Communications, Finance, Legal and Shared Services.
4. The Business Development unit will be responsible for external marketing initiatives such as bidding on Standard Offer Supply contracts in New England and elsewhere, supply contracts to other Maritime utilities (such as Maritime Electric Co. Ltd. in PEI) and other business opportunities such as third-party development partnerships that would benefit the province.
5. The proposed structure anticipates that the debt of NB Power currently held by New Brunswick Electric Finance Corporation will be transferred back to the utility. This will allow for increased transparency of NB Power's financial situation and assist with debt management.
6. To facilitate greater accountability and transparency in rate setting, the entire NB Power organization will be subject to regulatory review and oversight by the New Brunswick Energy and Utilities Board.

What are NERC and FERC?

The Federal Energy Regulatory Commission (FERC) is an independent agency in the United States that regulates the interstate transmission of natural gas, oil, and electricity. The North American Electric Reliability Corporation (NERC) is the electric reliability organization in the United States that establishes and enforces reliability standards for the bulk-power system.

A vertically integrated utility model is consistent with the utility structure in other Canadian provinces such as British Columbia, Saskatchewan, Manitoba, Québec and Nova Scotia and would meet all the U.S. FERC market licensing and export requirements. This more open and transparent structure will help improve NB Power's relationships with the EUB, customers and other key stakeholders. It also promotes regulatory transparency by making all utility costs subject to regulatory scrutiny.

A vertically integrated utility presents additional opportunities for efficiency in administration and operational functions. In 2011, NB Power conducted a benchmarking review and compared its operating and financial performance to that of various integrated utility industry peer groups both in Canada and the United States. NB Power must further reduce its costs by approximately $30 million per year to become a top quartile utility in North America. Full integration is paramount for NB Power to move in this direction.

Our experience since 2004 has shown that New Brunswick faces challenges and barriers associated with being a small jurisdiction and a small electricity market area that preclude a competitive electricity market from thriving. The 2004 competitive electricity market model has not worked for New Brunswick. As a result we have an electric utility structure, a market structure and rules that are overly complex and provide little or no value to New Brunswickers. Reintegration of the utility will address these issues.

Key Objectives Served by this Action

Low and Stable Energy Prices - Reintegrating NB Power will have a significant impact on internal costs as staff, overhead and other resources are more efficiently and effectively utilized throughout the organization as opposed to operating in "silos" as is the case today.

Effective Regulation - Reintegration will also provide the opportunity to subject all of NB Power's operations to regulatory oversight and review, rather than just the transmission and distribution companies. Increased scrutiny by the New Brunswick Energy and Utilities Board will ensure NB Power continues to operate in the most efficient and effective manner possible.

2. Electricity Market and New Brunswick System Operator

Description and Background

The Province of New Brunswick will review our electricity market policies and implement appropriate structural and operational changes, including the dissolution of the NBSO and migration of system operator functions back to NB Power.

In the early 2000s, the United States Federal Energy Regulatory Commission (FERC) encouraged the formation of regional independent system operators in order to encourage and facilitate the expansion of competitive electricity markets. A number of Canadian electricity exporting jurisdictions that were anxious to maintain access to the U.S. market responded by establishing independent system operators, including New Brunswick.

Historically, New Brunswick's bulk electricity system operation functions were performed by NB Power. In April 2003, the New Brunswick legislature passed the *Electricity Act*, which provided for the restructuring of NB Power and the creation of the New Brunswick System Operator (NBSO), which was mandated to take over these system operation functions. In October 2004 the Act became law.

Utilities now have a better understanding of FERC requirements. The primary requirement for Canadian jurisdictions is to provide open, non-discriminatory transmission access that meets the FERC reciprocity requirements. This can be done through either a vertically integrated model or through an independent system operator.

Three of Canada's four largest exporters of electricity – Quebec, Manitoba and British Columbia – operate integrated utilities with functionally separate (but not independent) system operations. These jurisdictions have concluded that all the FERC requirements for open access transmission can be met without the system operator being an independent organization. In fact, BC Hydro recently reintegrated its independent system operator back into its Crown utility, achieving benefits in system optimization, compliance with regulatory requirements and significant cost savings to its ratepayers. The government of New Brunswick proposes to follow a similar path with the NBSO.

As the NBSO has transitioned from a direct carve-out of NB Power into a fully staffed, independent organization striving to carry out its legislated mandate, its costs have increased accordingly. In fact, the NBSO's operating costs have increased by approximately 150 percent in the seven years since its incorporation.

By establishing and enforcing proper functional separation and codes of conduct within the organization, a fully integrated utility (including system operator functions) can maintain the adequacy and reliability of the integrated electricity system and meet NERC/FERC requirements relating to reliability and open, non-discriminatory transmission access and reciprocity, thereby preserving our access to U.S. electricity export markets. Recognizing that it may not be desirable for NB Power to take over certain functions that the NBSO currently carries out - such as monitoring and enforcing reliability standards - these responsibilities will be moved to, or independently reviewed by, appropriate organizations outside of NB Power.

In addition to taking over the system operation function, NB Power will become the sole developer and owner of the transmission system in New Brunswick, thus maximizing our geographic advantage in the international northeast region. Reserving the right for NB Power to provide new interconnection transmission capacity, rather than market participants from outside New Brunswick, will maximize the benefits to New Brunswick on energy deals being transacted through the province. This will not however inhibit NB Power from seeking partners in the construction of new transmission lines.

Further, NB Power will be permitted to seek a higher rate of return on transmission facilities that are built for interconnections, similar to what FERC has allowed in the United States to stimulate inter-state transmission construction.

Key Objectives Served by this Action

Low and Stable Energy Prices - Dissolving the NBSO and reintegrating the system operation function into NB Power, altering our ineffective competitive electricity market model to reflect the reality of New Brunswick's limited market potential, and restricting future development and ownership of transmission system assets to NB Power will reduce costs, reduce in and out-of-province revenue leakages and maximize efficiencies. This will assist with maintaining low and stable electricity rates into the future.

3. NB Power - Debt Management Plan

Description and Background

The Province of New Brunswick will direct NB Power to implement a debt management plan, allowing it to reduce its debt and create shareholders equity.

NB Power's capital structure consists almost entirely of debt. Altering this capital structure so there is both debt and equity would be more in line with other Canadian government owned electric utilities and is desirable for a number of reasons. These include lowering future debt servicing costs, less volatility in rates and allowing meaningful performance benchmarking against other electric utilities.

Government owned utilities typically do not have equity invested by the government due to the fact that funds come from the same source: government either borrows on behalf of the utility and creates a corresponding debt, or borrows to make an equity injection. With 100 percent debt, financing costs are simply interest payments, and rates are set to recover against these costs. Alternatively, if a portion of the capital of the utility is private equity, then the costs would be higher by the difference between the return on equity (typically around 9 percent for regulated utilities) and the debt costs (approximately 5 percent for government backed debt). Rates would necessarily be higher to cover the financing costs of the capital structure of debt and equity.

As a result, options for NB Power debt reduction and equity creation are:

1. Allow NB Power to generate incremental cash flow by reducing expenses in the organization and other reasonable means, and using this cash flow to create equity while continuing to pay down debt.
2. Enter into joint ventures with partners where assets are shared and NB Power receives outside equity injection where economic and reasonable.

These options were also recommended by the New Brunswick Energy Commission. Government will direct NB Power to focus on the first option as the preferred method to work towards debt reduction and equity creation. The utility will also be directed, however, to fully explore opportunities for regional collaboration that may arise and that make sound financial sense for the utility and its customers.

NB Power has regulated cash flows that will enable the utility to retire existing debt as it matures and there is no current requirement to borrow significant amounts for capital expenditures over the next decade. As a result, NB Power will be mandated to continue cost reductions and use the cash flows generated from those savings to reduce debt and to build equity within the utility. Both NB Power and the EUB will use a 20 percent reduction in current debt levels and an equity level of 20 percent of the capital structure as the ten year goals for NB Power.

NB Power will also be directed to follow the capital investment path set out in the utility's integrated resource plan in conjunction with corporate and operational cost reductions in order to ensure the lowest rates possible are achieved for ratepayers. The New Brunswick Energy and Utilities Board will ensure that NB Power's annual income is limited to the amount necessary to achieve these objectives.

In addition to permitting a reasonable level of incremental cash flow, the Province will eliminate the payments in lieu of income taxes and Transco dividend payments that NB Power is currently required to pay to government. This will allow NB Power to further reduce its debt burden.

Key Objectives Served by this Action

Low and Stable Energy Prices - The cost of servicing NB Power's debt is a major part of its operating expenditures. Altering the utility's debt and equity levels to be more in line with other electric utilities would allow it to reduce its interest payments and build an equity cushion to help smooth over periods of reduced revenues or increased capital spending, mitigating the need for rate increases in direct response to these events.

4. NB Power – Regulatory Oversight and Integrated Resource Plan

Description and Background

The Province of New Brunswick will subject all NB Power operations to regulatory oversight and review, and require NB Power to present an Integrated Resource Plan every three years and a Financial Forecast annually to the New Brunswick Energy and Utilities Board (EUB), or as directed by the EUB.

To improve transparency and accountability, an integrated NB Power will be required to demonstrate its costs and revenues across the entire company when requesting rate changes, including rate increases of three percent or less, which are currently exempt from regulatory scrutiny. In addition, NB Power will be required to assess electrical system requirements through an Integrated Resource Plan (IRP). This process will utilize the principle of least cost procurement, economic and environmental evaluations, determine appropriate risk values for future electricity requirements and the best options to meet them. The results of this IRP process will be shared with NB Power's customers and stakeholders by submitting the IRP to the New Brunswick Energy and Utilities Board (EUB) within one year of reintegration of the utility, and thereafter at three year intervals or more frequently if directed by the EUB. In addition to submitting the IRP, NB Power will also be required to file a 10 year strategic, financial and capital investment plan with the EUB during its first year as an integrated utility, and will provide annual financial forecasts to be used by the EUB in the rate-setting process.

Two additional items will also bring public and shareholder transparency. Beginning in 2011-12, NB Power is required to issue quarterly financial statements and the utility, as represented by the CEO and the Chairman of the Board, will be required to appear annually before the New Brunswick Legislature's Crown Corporations Committee.

Key Objectives Served by this Action

Low and Stable Energy Prices - Requiring NB Power to appear before the EUB to defend its costs and projections across the entire organization, as opposed to only the Distribution and Transmission operations as currently required, will ensure the utility's costs and operations are as efficient and effective as possible while adhering to government policy. In addition, a regularly updated IRP will assist NB Power and the EUB in identifying the most cost effective ways to meet our electricity requirements into the future.

Energy Security - An integrated resource plan will assist NB Power and the EUB to identify future demand trends and asset performance expectations, ensuring that we plan ahead so that there will always be enough electricity supply to meet our demand requirements. The IRP will also identify the optimal mix of domestic supply sources to ensure security of supply, as well as encourage energy efficiency and utility-based demand side management initiatives.

Reliability of the Electrical System - An integrated resource plan allows the utility to take a long view of our electric system to determine future electricity requirements and the best options to meet them. This will allow us to maintain a robust and reliable electric system for all New Brunswickers.

Environmental Responsibility – Requiring NB Power to consider and incorporate principles of environmental stewardship into its long term planning process via the IRP will ensure that future operations and asset development continue to be carried out in an environmentally sustainable manner.

Effective Regulation - Increased scrutiny by the EUB will ensure NB Power continues to operate in the most efficient and effective manner possible.

5. Regional Electricity Partnerships

Description and Background

The Province of New Brunswick will pursue regional electricity agreements, joint ventures and partnerships where there are positive commercial outcomes for NB Power and defined benefits for New Brunswick ratepayers.

New Brunswick has a mature and well-developed electricity system and a unique geographic advantage because we are electrically connected to four neighbouring jurisdictions: Prince Edward Island, Nova Scotia, New England (via Maine) and Quebec. These provide New Brunswick with access to electricity from numerous sources, including renewable sources from Quebec and, in the future, Newfoundland and Labrador. The same connections can also move electricity generated from cleaner energy sources in New Brunswick and from regional neighbours to other markets. Our interconnectivity also allows for greater cooperation in areas such as generation reserve requirements, load balancing and other system stability and reliability measures. It is widely believed that we could take on more intermittent renewable electricity sources, such as wind and solar energy, if such capacities were backed up and balanced by a larger regional generation and load base.

To examine these and other regional issues and opportunities, the Government of Canada has sponsored the Atlantic Energy Gateway (AEG) initiative. Since 2009, this project has served as a launching pad for detailed discussions and studies of potential benefits of regional electricity cooperation, including enhanced system integration, expanding clean and renewable energy sources, and regional transmission planning. New Brunswick is actively engaged with the other Atlantic Provinces and the federal government, supported by the region's utilities.

In addition to the AEG initiative and bilateral opportunities with neighbouring jurisdictions, New Brunswick, through the Department of Energy, will remain an active participant in a number of regional, national and North American energy sector organizations, including the Federal-Provincial-Territorial energy committees that report to the Canadian Council of Energy Ministers, the Northeast International Committee on Energy, and the Energy Council, which includes representation from sixteen North American energy producing states and provinces.

Overview of Atlantic Energy Gateway Initiative

The Atlantic Energy Gateway initiative facilitates the development of clean energy resources in Atlantic Canada by fostering collaboration, common understanding and communication among governments, utilities and the private sector. Led by the Government of Canada and supported by all four Atlantic Provinces, the initiative carries out regional electricity studies and resource modeling.

Key Objectives Served by this Action

Low and Stable Energy Prices - Sharing costly system reliability requirements, load and generation balancing, and moving to a regional transmission planning model represent potential cost savings to NB Power. Access to external electricity markets allows us to purchase imported energy when prices are low, and sell surplus electricity when prices are high.

Energy Security - Maintaining and strengthening relationships with our neighbours, particularly Quebec and New England, will ensure we continue to have access to electricity generated outside New Brunswick. This is especially beneficial when our generating capacity is constrained (during planned and unplanned outages).

Reliability of the Electrical System – Cooperation and interconnections with neighbouring jurisdictions enhances system reliability.

Environmental Responsibility - New Brunswick's electricity system currently balances wind power generation from our province, Northern Maine and PEI. This allows more energy to be harnessed than would be possible if these jurisdictions had to balance their own wind generation. If regional balancing were expanded to include Nova Scotia and Newfoundland and Labrador, it could result in significantly more intermittent renewable generation regionally than would be possible without regional cooperation.

6. Smart Grid Technology and Innovation

Description and Background

The Province of New Brunswick will expand the network of smart grid stakeholders and partnerships and work with existing and new smart grid pilot projects.

The concept of a smart grid is to add monitoring, analysis, control, and communication capabilities to an electrical distribution system in order to maximize efficiency and reduce consumption. The global smart grid market is now defining a shared vision and a path forward with stakeholders of the future electric power system. There is an increasing need for the sharing of progress and pilot project outcomes among stakeholders, and for collaboration on both research and deployments.

An expanded network of smart grid stakeholders includes the Department of Energy and other government departments, NB Power and municipal electric utilities, Efficiency NB, private sector technology firms, technology sector organizations, environmental groups, and post-secondary educational institutions. This network will continue to collaborate and build partnerships with neighbouring jurisdictions.

Existing pilot projects, such as the NB Power-led PowerShift Atlantic initiative, as well as new ones, will drive development and implementation of smart grid and energy efficiency technologies into homes and businesses. Smart grid innovation will enable residential and business consumers to better manage energy consumption and allow our energy dependent business sectors to be more competitive.

The success of the smart grid initiatives will be measured in ratepayer benefits and economic activity in the province's technology sector.

PowerShift Atlantic smart grid pilot project

PowerShift Atlantic is a demonstration project focused on finding more effective ways of integrating wind energy into the electricity system in the Maritime Provinces. It uses pilot programs with residential and commercial customers and is one of 19 Canada-wide projects supported by Natural Resources Canada's Clean Energy Fund.

Key Objectives Served by this Action

Low and Stable Energy Prices – Smart grid innovation creates efficiencies throughout the entire electrical system. New technologies contribute to better demand response and load control, allowing utilities to lower costs by shifting loads to less expensive generation during peak demand. These technologies also assist ratepayers to adjust consumption and usage patterns to save costs.

Reliability of the Electrical System - Technologies such as embedded sensors and automated controls help utilities better anticipate, detect and respond to system problems. In many cases, these technologies are self-healing and can automatically avoid or mitigate power outages, power quality problems and service disruptions, thereby providing ratepayers with a more reliable electrical system.

Environmental Responsibility - Many renewable energy generation resources, such as wind generation, are intermittent in nature. Smart grid technologies enable power systems to better predict availability of these sources and to utilize them in an optimal and cost efficient manner. Smart grid will help us achieve our environmental goals through the enhanced integration of variable renewable energy resources.

7. Large Industrial Renewable Energy Purchase Program

Description and Background

The Province of New Brunswick will bring qualifying large industrial companies' electricity costs in line with their Canadian competitors by implementing a Large Industrial Renewable Energy Purchase Program.

Under the proposed Large Industrial Renewable Energy Purchase Program (LIREPP), NB Power will purchase electricity from renewable sources, such as biomass and river hydro, from qualifying large industrial customers who have renewable electricity generating facilities located in New Brunswick. The revenue from renewable energy sales will assist these qualifying customers to reduce their net electricity costs and thereby increase their competitiveness in the global market.

The LIREPP is designed to address the need for long-term stable and competitive electricity costs for New Brunswick's largest industries. The program is the result of more than 18 months of public-private sector collaboration through the work of a task force and the efforts of the Energy Commission.

This is a New Brunswick-based solution to our industries' widely recognized energy and competitiveness challenges, effectively reducing electricity costs to be in line with the average costs of competitors across Canada. The retention of anchor industrial operations and facilities will support the overall sustainability of our major industrial employers, particularly the forestry sector and the rural and northern economies most affected by it. Furthermore, retaining these large base-load electricity customers will enable NB Power to avoid a significant loss of income which would occur if large industrial customers were to leave New Brunswick as some have done in recent years. This income loss would have to be recovered from NB Power's remaining residential, commercial and industrial customers through higher rates.

Financial impacts for NB Power associated with losing large energy loads

Large industrial facilities are not only key employers in their communities but significant customers for NB Power. A shut down of either of the two largest of these companies would result in a significant income loss for NB Power that could lead to rate increases of upwards of 3% for all NB Power customers.

Key Objectives Served by this Action

Low and Stable Energy Prices - The Large Industrial Renewable Energy Purchase Program will result in energy cost competitiveness and stability to qualifying large industrial customers. This will ensure these core businesses remain in New Brunswick, providing much needed employment and economic opportunities to our local communities and suppliers. In addition, procuring a supply of less price-volatile renewable electricity from LIREPP participants and maintaining base load industrial customers will assist NB Power in maintaining stable rates for all its customers.

Environmental Responsibility - Using more electricity generated from renewable sources reduces our need to burn fossil fuels for our electricity and has an overall positive impact on emissions and other environmental concerns.

8. Renewable Portfolio Standard

Description and Background

The Province of New Brunswick will increase the provincial Renewable Portfolio Standard to a minimum of 40 percent of NB Power's in-province sales by 2020.

NB Power has one of the most diversified generation fleet of facilities in North America. Decisions to develop our hydro and biomass resources, made decades ago, have enabled our province to become a North American leader in diverse renewable energy generation. NB Power currently sources 28 percent of its in-province electricity demand from wind, biomass and hydro resources. The Province will increase its commitment to pursue renewable energy by creating a new Renewable Portfolio Standard (RPS) requiring NB Power to ensure that, by 2020, 40 percent of its in-province electricity sales are provided from renewable energy. Renewable energy imports, including large-scale hydro from Quebec or Newfoundland and Labrador, will be eligible to meet the new Renewable Portfolio Standard, subject to certain conditions.

Since the goal of the RPS is to reduce the use of fossil fuels generation, that objective can be met by reducing energy usage or by building renewable generation. In most cases, energy efficiency is a less expensive option than building new renewable generation. As a result, NB Power will be directed to aggressively pursue Demand Side Management to assist in meeting the RPS target.

In the interest of continuing to improve New Brunswick's environmental performance, energy efficiency is an essential element. By shifting and reducing electricity demand, NB Power will be able to reduce the need for generation from fossil fuelled plants, thereby increasing the proportion of renewable energy on its system. Innovative programs that result in significant energy reduction will enable NB Power to achieve the 40 percent RPS in the most cost-effective and efficient manner.

Once the Point Lepreau Nuclear Generating Station is back online in 2012, another 35 percent of our provincial electricity supply will come from non-emitting nuclear energy. Therefore by 2020, 75 percent of New Brunswick's electricity demand will be met by non-emitting or renewable sources.

The balance of requirements will come from a mix of renewable and non-renewable sources in order to maintain a reasonable level of generation diversity.

Key Objectives Served by this Action

Low and Stable Energy Prices - Integrating additional renewable energy will help protect New Brunswickers from the cost volatility of electricity generated from fossil fuels.

Energy Security – Developing additional indigenous renewable energy will lessen our dependence on imported fossil fuels.

Environmental Responsibility - Additional renewable energy will reduce our greenhouse gas and associated emissions.

9. Future Development of our Renewable Energy Resources

Description and Background

The Province of New Brunswick will (a) support local and First Nations small scale renewable projects; (b) integrate current and future wind generation in the most cost-effective and efficient manner; and (c) support promising solar, bio-energy and other emerging renewable energy technologies.

Local and First Nations Small Scale Renewable Projects - Local small scale renewable projects provide opportunities for non-profit organizations, associations, co-operatives and municipalities to develop renewable energy projects for the greater benefit of the community, and will play a significant role in achieving our new 40 percent Renewable Portfolio Standard. NB Power will procure new renewable energy resources through competitive Requests for Proposals (RFP) and projects will be evaluated on criteria to be released prior to each RFP. These criteria will include the net economic and social benefits to the community, cost of energy production, rate of return, business plans, size of project, and cost of integrating the generation into the grid.

As a reflection of our government's on-going dialogue with New Brunswick First Nations and the Assembly of First Nations Chiefs with respect to their "2010 Statement on Energy" and the sustainable development of our natural resources, a portion of the RPS target to be met through the Local Small Scale Renewable Projects Program will be set aside for First Nations projects. In order to meet this goal, Government will work with NB Power and New Brunswick First Nations to assess the feasibility of potential projects under this allocation. Discussions will continue with New Brunswick First Nations and the Government of Canada with respect to sustainable energy practices and energy-related issues of mutual interest.

Small-scale, locally owned distributed generation projects provide optimal benefits to both NB Power and the local economy. They provide predictable revenue streams to their proponents and improve the efficiency of the electricity distribution system by reducing line losses. A phased-in implementation strategy will enable NB Power to meet the RPS in a manner that respects the utility's current generation supply and help maintain stable rates.

Wind Energy – With 294 MW of wind generation capacity, New Brunswick is a leader in integrating wind energy onto our electrical system. NB Power has secured long term wind generation contracts at competitive market rates, providing clean, emission free electricity with stability against the volatility of fossil fuel generated electricity.

The intermittent nature of wind energy requires utilities to provide load balancing using other forms of generation. An additional 208 MW of wind generation is within our regional balancing area, which includes Prince Edward Island and northern Maine, bringing the total wind energy to 502 MW that NB Power is, through agreements, required to balance with its existing generation fleet. For a relatively small power system (with seasonal loads that drop below 1000 MW), New Brunswick has one of North America's highest proportions of wind generation capacity on its system.

This comes with challenges and costs. At times when generation is exceeding in-province demand, excess generation is often sold at prices lower than the contracted price for wind. Even when NB Power is able to utilize wind generation in-province, there are sometimes missed opportunities to purchase energy from outside sources at a lower cost. With NB Power's run of the river hydro system, there are times when very low cost renewable generation capacity is available but must go unused in order to accept contracted wind generation.

With the significant amount of large scale wind energy currently being balanced on our system, the next phase of our renewable energy development will focus on smaller scale projects with a particular emphasis on non-intermittent forms of generation, such as wood-based biomass. Wind energy has many benefits and will continue to be integrated in the New Brunswick balancing area, but in measured and manageable stages.

What is wind balancing?

Wind balancing ensures that when a wind farm is not generating electricity or generation fluctuates because of weather conditions, there is an additional generation source to fill the gap. These additional sources, usually fossil fuel generators or run-of-river hydro in New Brunswick, must be able to ramp up or down production on very short notice.

Emerging Renewable Energy Technologies - Energy technologies are constantly evolving and new developments emerge on a regular basis. In order to capitalize on technologies that can help New Brunswick maintain competitive rates, reduce energy consumption and minimize environmental impacts, the Department of Energy must serve as an information conduit regarding emerging clean and renewable energy technologies, and foster their development and adoption where applicable.

Immediate priorities include:

- Developing a Provincial biomass resource map.
- Promoting and distributing wood based pellet industry research and best-practices.
- Encouraging public awareness and adoption of net metering and embedded generation.
- Developing a provincial solar energy resource map.
- Identifying distributed generation, district heating and cogeneration best practices.
- Encouraging further investigation of bio-fuel development.

Key Objectives served by this Action

Low and Stable Energy Prices - Integrating additional renewable energy will help protect New Brunswickers from the cost volatility of electricity generated from fossil fuels.

Energy Security – Developing additional indigenous renewable energy will lessen our dependence on imported fossil fuels.

Environmental Responsibility - Additional renewable energy will reduce our greenhouse gas and associated emissions.

10. Wood Based Biomass Resources

Description and Background

The Province of New Brunswick will develop and implement supporting policies to optimize the energy output from our province's wood based biomass resources with a specific focus on pellets.

More than 20 percent of New Brunswick homes are already heated by wood and the use of biomass heat in New Brunswick could be even greater with the increased use of pellets from wood or agricultural waste, both which have emerged as viable alternatives for centrally heated homes.

The Pellet Fuels Institute in the United States is developing standards for the U.S. Environmental Protection Agency. Many European regions have had standards for years. There are currently no standards in Canada, however. There is an opportunity for New Brunswick to lead in the development and expansion of our pellet industry by adopting pellet standards, possibly in conjunction with other Atlantic Canadian provinces.

Recent consultations with stakeholders and the forest products industry culminated in a Pellet Workshop in May 2011. Immediately following the workshop, a number of initiatives were identified and initial priorities will focus on:

- Stringent efficiency, emission and quality standards for central heating systems.
- Increasing consumer confidence by developing NB Pellet standards that meet or exceed those proposed by the Pellet Fuels Institute.
- A quality assurance and compliance program.
- Protocols for the handling, transportation and storage of pellets.
- Continued and expanded use of wood based biomass as a heating source for government buildings, including schools and hospitals.
- Certification requirements for pellet system installers.
- Enhanced feedstock source considerations, such as minimal certification levels, quality assurance, and sustainable forest practices.
- Incentive programs through Efficiency NB (both residential and commercial).
- Increased domestic demand for biofuels that complements government and other stakeholders' efforts to develop the value-added wood sector in New Brunswick.
- Policies to support increased use of wood biomass for combined heat and power, or thermal applications.
- Biomass district heating applications.

Key Objectives Served by this Action

Low and Stable Energy Prices - Integrating additional renewable energy will help protect New Brunswickers from the price volatility of electricity generated from fossil fuels.

Energy Security - Utilizing additional indigenous renewable energy will lessen our dependence on imported fossil fuels.

Environmental Responsibility - Additional biomass energy will reduce our greenhouse gas and associated emissions.

The Pellet Fuels Institute

The Pellet Fuels Institute is a non-profit association currently developing pellet standards for the US marketplace, focusing on pellet density, moisture content, size and ash content. There is a desire for similar standards in NB that guarantee quality control for consumers and to help ensure access to export markets.

11. Energy and Climate Change

Description and Background

The Province of New Brunswick will develop the key energy components for the 2012-2020 New Brunswick Climate Change Action Plan.

In New Brunswick, the various forms of energy use such as transportation, electricity generation or industrial sources, are responsible for 92 percent of greenhouse gas emissions. Energy policy is therefore closely tied to our carbon footprint. The Department of Environment, in cooperation with stakeholders and other departments, will develop a new Climate Change Action Plan. The Plan will be developed following an analysis of greenhouse gas (GHG) reduction and adaptation options and a public engagement process. The Department of Energy, Efficiency NB and NB Power will also be important contributors to the energy components of the renewed Climate Change Action Plan. The outcomes of the actions included in the Plan will help New Brunswick achieve its target of reducing GHG emissions.

The plan is expected to be comprehensive in scope and include a number of specific actions in the following areas: renewable energy and energy efficiency, transportation, waste reduction and diversion, industrial sources, government leading by example, adaptation, partnerships and communication.

Key Objectives Served by this Action

Environmental Responsibility - In addition to the essential need for a healthy environment, the province's environmental performance affects our competitiveness for investment attraction, marketability of goods and services, and economic development. Our province must do its part to mitigate climate change and remain competitive.

12. Electricity Efficiency Plan

Description and Background

The Province of New Brunswick will require electric utilities, in conjunction with Efficiency NB, to prepare a three year electricity efficiency plan.

Energy efficiency results in lower energy costs and improved environmental performance. It means reduced reliance on imported energy and lower vulnerability to price fluctuations. Managing demand for electricity through customer efficiency improves the reliability of the electricity system by reducing large electrical load fluctuations. It also reduces maintenance costs and extends the useful life of the supply system components. Energy efficiency projects for residences and businesses are often locally-sourced, contributing to our economic activity and diverting spending dollars away from imported fuels.

Energy efficiency programs are common in North America, with well established standards of practice in determining economic levels of energy efficiency and demand side management (DSM) investment by utilities.

As part of a general energy efficiency approach, NB Power and municipal electric utilities will be required to prepare a three year Electricity Efficiency Plan, focused on electricity consumption. This will be done in cooperation with Efficiency NB where integrated resource planning (IRP) and other data and analysis are used in the planning process.

What is DSM?

Demand Side Management (DSM) is used by energy utilities to help customers to reduce their energy consumption and to shift the timing of demand away from peak periods. This helps reduce customer costs and allows utilities to delay or avoid the need to build new generation or procure new supply. DSM methods include education and awareness, incentive programs and innovative rate structures that help customers improve their efficiency and timing of energy use.

Key Objectives Served by this Action

Low and Stable Energy Prices – Energy efficiency and utility demand side management are less costly than most supply options and must be encouraged.

Energy Security - Our reliance on imported energy and our vulnerability to price fluctuations will diminish with reduced consumption, therefore increasing our energy security.

Reliability of the Electricity System - Managing demand for electricity through customer efficiency improves the reliability of the electricity system by reducing large electrical load fluctuations and overload situations. It also helps to reduce maintenance costs and extend the useful life of the supply system components.

Environmental Responsibility - Reduced energy consumption has the effect of lower air emissions and other environmental impacts, therefore improving our environmental performance and reducing our carbon footprint.

13. Energy Efficiency Building Code Standards

Description and Background

The Province of New Brunswick will require minimum energy efficiency standards for new building construction in New Brunswick by adopting national standards and will amend the New Brunswick Building Code Act to create the authority to do so.

Minimum building codes and standards help to make housing stock and business structures safe, durable and efficient. Standards that are directed at how structures manage energy requirements for heating, cooling, air circulation and other systems can result in permanent improvements in energy efficiency across the province.

The government has directed the Department of Public Safety to bring forward amendments to the *New Brunswick Building Code Act* which will provide authority for the regulation of energy efficiency standards in new construction. Minimum energy efficiency standards will be established for new building construction as part of building code requirements.

Key Objectives Served by this Action

Low and Stable Energy Prices – Minimum building codes and standards are important contributors to energy efficiency, our lowest cost energy option.

Energy Security - Our reliance on imported energy and our vulnerability to price fluctuations will diminish with reduced consumption, therefore increasing our energy security.

Reliability of the Electricity System - Reducing demand for electricity through minimum building codes and standards improves the reliability of the electricity system.

Environmental Responsibility - Reduced energy consumption has the effect of lower air emissions and other environmental impacts, therefore improving our environmental performance and reducing our carbon footprint.

14. Energy Efficient Appliances and Equipment

Description and Background

The Province of New Brunswick will upgrade the list of regulated appliances and equipment under the *Energy Efficiency Act*.

Minimum efficiency levels for appliances and equipment are an important complement to energy efficiency standards in building codes. Technology innovation continues to raise potential efficiency levels, so periodic review and upgrading of minimum efficiency standards is needed to keep pace with the market. The federal government and other provinces contribute to continuing research and upgrading of minimum energy performance standards. These can be referenced by our Province in its own regulation.

Regulated minimum efficiency levels of appliances and equipment under the Energy Efficiency Act will therefore be upgraded on a two year cycle.

Key Objectives Served by this Action

Low and Stable Energy Prices - Energy efficiency through minimum efficiency levels for appliances and equipment provides permanent energy cost reductions.

Energy Security - Our reliance on imported energy and our vulnerability to price fluctuations will diminish with reduced consumption, therefore increasing our energy security.

Reliability of the Electricity System - Reducing demand for electricity through minimum efficiency levels for appliances and equipment improves the reliability of the electricity system.

Environmental Responsibility - Reduced energy consumption has the effect of lower air emissions and other environmental impacts, therefore improving our environmental performance and our reducing carbon footprint.

15. Natural Gas Distribution Rates

Description and Background

The Province of New Brunswick will review the natural gas rate structure and distribution network with the objective of achieving a cost-based rate structure and improve access to natural gas across the Province.

Enbridge Gas New Brunswick (EGNB) distributes natural gas under the terms of a 1999 agreement with the Province. At the outset, it was recognized that substantial investment and operating costs were required to build a new distribution system in several communities and to attract new customers. Because initial costs far exceeded revenues, the regulator approved market based distribution rates which allows EGNB to offer rates based on target savings compared with alternate sources, such as oil or electricity. Unexpected trends in oil and gas prices resulted however in very high distribution rates, compared with more mature distribution markets. Due to the current market based rate structure, the benefits of current and projected future low gas commodity prices are not being passed onto the consumer.

The Energy and Utilities Board is preparing for the eventual transition from market based rates to a cost of service based regulatory model. Government will also explore options to expedite the process with the objective of achieving more reasonable and sustainable distribution rates for all classes over the long term. Options aimed at the distribution of gas to areas not currently served by pipelines will also be explored. These initiatives are aimed at reducing natural gas delivery rates, particularly for those customer classes paying more than the utility's costs of delivery, through the adoption of a cost of service based rate model and related programs to reduce utility costs and increase the revenue base. This will contribute to higher adoption rates for natural gas, a sustainable gas distribution system under regulatory oversight, and less reliance on imported energy from oil.

Key Objectives Served by this Action

Low and Stable Energy Prices - A new rate structure for natural gas customers will, first and foremost, contribute to the key objective of low and stable energy prices. Although natural gas commodity prices will continue to be based on market forces that are beyond the control of government, the distribution rates for delivery of gas will no longer be linked to the cost of alternative energy, in particular, oil. Lower prices will lead to greater adoption of natural gas, which in turn should help to lower proportionate costs.

Energy Security - Lower, cost-based distribution rates will likely lead to greater adoption of natural gas as a source of space heating and industrial process energy, which will contribute to the goal of energy security by providing a greater diversity of energy choices. Improved access will provide another option for some consumers and industry not currently being served.

Effective Regulation - A rate structure based on the cost of service is the almost universally adopted standard for regulated utility rates in North America. Adopting cost of service rate regulation will therefore also result in more effective regulation, by the Energy and Utilities Board, since the principles of rate regulation will be more standardized.

16. Petroleum Products Pricing

Description and Background

The Province of New Brunswick will perform a comprehensive review of the *Petroleum Products Pricing Act* and Regulations for the purpose of ensuring its continued effectiveness in achieving the objectives of petroleum price stability, while ensuring the lowest possible price to the consumer without jeopardizing the continuity of supply.

Although there was a third-party review of the petroleum price regulatory structure six months after it came into effect, there has never been a comprehensive long term retrospective. The original wholesale and retail margins remained unchanged until June 2011, when the EUB amended the retail margin for motor fuels by 0.9 cents per litre. In the Energy and Utilities Board's last two margin reviews (2008 and 2011) a lack of evidence was cited in denying most of the margin increases that had been sought by wholesalers and retailers.

The New Brunswick petroleum market has been affected by a number of influences. Natural gas has displaced roughly 5,000 former consumers of home heating oil. Retail outlets continue an evolution away from the traditional corner gas station towards large, multi product retail operations. Volatile prices have become the norm. There are federally mandated renewable fuels in gasoline, and in 2013, in diesel and heating oil. New vehicle technology including electric and high-efficiency vehicles will bring non-petroleum fuel choices and fundamentally alter the nature of petroleum distribution.

Now that the petroleum price regulatory structure has been in existence for five years, there is an opportunity to re-examine all of its aspects to ensure that it continues to serve its policy objectives for now and the future. The desired outcome would be a simpler and rationalized framework for the regulation of petroleum product pricing.

Key Objectives Served by this Action

Low and Stable Energy Prices - Although the outcome of a comprehensive review cannot be predicted, a clear objective will be to ensure that the overall regulatory framework continues to serve New Brunswick petroleum consumers with the lowest possible price, while maintaining reasonable margins for the wholesale and retail industry that supplies the market.

Effective Regulation - A comprehensive review may result in recommendations for greater effectiveness in the regulatory framework and continued relevance as petroleum markets continue to evolve.

17. Energy and Utilities Board

Description and Background

The Province of New Brunswick will restructure the Energy and Utilities Board to consist of exclusively full time members.

The New Brunswick Energy and Utilities Board (EUB) is an independent regulatory agency established by law. Agencies like the EUB are established to regulate markets served by natural monopolies, such as electric and natural gas utilities, to ensure fair and reasonable rates. The mandate of the EUB is simple - to serve the public interest. This requires a balance between the interests of ratepayers and the interests of the utilities, enabling them to provide a beneficial public service and providing the opportunity to maintain sustainable operations.

The EUB follows a formal hearing process that allows all interested parties the opportunity to present evidence. This process removes the decision-making power from government departments and places it in the hands of a board whose members and staff have the independence, expertise, experience and discretion to make decisions in the public interest.

The EUB is made up of two full-time and eight part-time members appointed by government. The full-time Chair and Vice Chair are appointed for ten and seven years, respectively; other members are appointed for terms of between two and five years. The Board must have a panel of at least three to exercise its powers.

There are increasingly greater demands being placed upon the EUB, in terms of both the volume and complexity of regulatory proceedings that it faces on an ongoing basis. An adequate number of full-time members would help the EUB overcome scheduling issues and would ensure that there is a greater continuity and consistency of experience and expertise in the Board's makeup.

This plan will address the need to (a) have all Board members possess a high degree of regulatory experience and expertise; (b) make the Board more efficient in its mandate through full-time availability for regulatory processes, decision making and administrative functions; and (c) reduce loss of continuity and depth of expertise from Board member attrition and term expirations.

Key Objectives Served by this Action

Effective Regulation – A complete panel of full-time Energy and Utility Board members would greatly contribute to the goal of effective regulation by providing the knowledge base needed in an increasingly demanding and complex regulatory environment.

18. Office of the Public Energy Advocate

Description and Background

The Province of New Brunswick will establish and appoint a full time public energy advocate to replace the system of ad hoc appointment of public intervenors.

Utility consumer advocacy arose with the rise of regulation of energy utilities. The traditional role of consumer advocates is to challenge proposed rate increases by intervening in formal regulatory cases. Consumer advocates may also focus on consumer protection issues, such as service quality, reliability and price stability.

There is no single model for utility consumer advocacy. Our current model provides for the ad hoc government appointment of a practicing lawyer as a public intervenor to represent ratepayer interests. A public intervenor remains independent of government influence and conducts the intervention according to his or her discretion. Other advocacy models provide for cost recovery for advocacy groups appearing at regulatory proceedings or the establishment of a dedicated consumer advocate.

Public intervenor costs are direct expenses, paid by the utility, which usually include professional fees and the costs of experts employed to assist with evidence. In complex rate cases, costs can be significant. Although they are passed on to the utility, they are ultimately recovered from utility customers as part of the revenue requirement.

The current public intervenor model has a number of weaknesses:

- There is no particular requirement for knowledge, experience or expertise in relation to energy or regulatory matters.
- There is no guarantee of continuity of appointments, especially between government mandates.
- There is little or no oversight over costs.
- Appointments are limited to particular proceedings. There is no inter-proceeding advocacy role, nor is there an avenue by which public concerns, complaints or issues are brought to light.
- There is no guidance of the particular role or position to be taken at utility interventions, nor is there any clear definition of the stakeholder group (if any) that the public intervenor is mandated to represent.

The appointment of a full-time Public Energy Advocate would correct these limitations by:

- Ensuring a consistently high standard of competence and experience.
- Delivering services responsibly, effectively and efficiently.
- Providing accountability for an equitable allocation of costs.
- Providing continuous services, including information resources, complaint resolution and public advocacy in matters not tied to specific regulatory proceedings.
- Providing a clear mandate for the scope of the interests being served.

Key Objectives Served by this Action

Low and Stable Energy Prices – A key role of a Public Energy Advocate would be to challenge all utility rate applications in a way that assists the EUB in arriving at decisions that are just and reasonable.

Effective Regulation - The establishment of a Public Energy Advocate would offer better protection and new services for under-represented energy consumers in relation to utility rates and services and may result in a more equitable and accountable allocation of costs associated with the function of public interest advocacy in the regulated energy sector.

19. Energy Literacy, Education and Skills Development

Description and Background

The Province of New Brunswick will: (a) develop an energy sector workforce development strategy; (b) pilot an energy certificate program; and (c) implement an energy literacy, education and awareness program.

Workforce Development – Development of an energy sector requires a workforce development strategy to provide skilled energy workers. The Department of Post Secondary Education, Training and Labour will work closely with labour, industry, New Brunswick First Nations, economic development agencies, communities and our post-secondary education system to shape a workforce expansion plan for the energy sector. This will include the creation, within the trades, of the necessary flexibility to allow New Brunswick to be competitive in the construction, operation and maintenance of energy projects and the adoption of new technologies.

As clean, renewable and new energy technologies and opportunities develop, New Brunswick will require a significantly expanded energy workforce. There is increasing demand from homeowners and industry for energy efficient retrofits, which creates additional demand for skilled contractors and workers. Finally, energy sector companies are faced with the challenges of an aging workforce.

Because New Brunswick energy-based businesses will require greater workforce development, as demand grows for skilled energy workers, the Province of New Brunswick will work with stakeholders to shape an energy sector workforce development strategy, reflecting the diverse aspects of our energy sector.

Energy Certificate Program – In order to make informed decisions about energy consumption or energy related projects, a fundamental understanding of the complex factors involved is required. There is an ongoing need for business decision makers, professionals and energy workers to have a strong knowledge of energy issues and information. Our post-secondary institutions are uniquely positioned to train and educate those who play a role in a growing energy industry sector or who require better background knowledge of energy issues.

In collaboration with the Department of Energy, industry, labour and other stakeholders, the University of New Brunswick will pilot an Energy Certificate professional development program in 2012.

Energy Literacy - It is critical that New Brunswick citizens and businesses have access to information required to make informed energy decisions, or simply to understand the complex landscape of energy prices, efficiency, environmental impacts, regulations, and technical aspects of the energy industry.

The Province of New Brunswick will develop a centralized source of energy information as a knowledge resource for residents. A supporting education and awareness campaign will also be developed with multiple information tracks and delivery channels geared towards students, the public, New Brunswick First Nations and commercial and industrial users. There may also be opportunities to consolidate these plans with a planned national energy literacy initiative in a way that brings further benefits to New Brunswick.

Key Objectives Served by this Action

Low and Stable Energy Prices – Understanding energy will result in better and informed decisions for households and businesses. From vehicle purchases to home heating systems and the design of new buildings, decisions today will impact energy costs well into the future.

Energy Security – Access to a skilled and available energy sector workforce will contribute directly to our province's energy security and support future energy sector investments.

Environmental Responsibility – Informed residential, commercial and industrial energy users will be able to make energy choices which support energy efficiency and conservation efforts and reduce the environmental impacts associated with energy usage.

Effective Regulation – An important component of energy literacy and education is the role of regulation. Active and informed participation in the regulatory process is essential to effective regulation.

20. Energy Research and Development

Description and Background

The Province of New Brunswick will develop and implement a New Brunswick energy sector research and development strategy supporting the adoption of emerging clean energy technologies.

Research and development, and its application, is the lifeblood of any economy. People are always looking at new and better ways to do things in business, in life, and in the use of energy. Research has taken us through different phases of energy development including the introduction of nuclear-powered electricity, energy-efficiency construction, the creation of synthetic fuels and commercializing wind power. Energy policy must remain responsive to new ways to produce, process and distribute energy, with a particular focus on associated economic, social and environmental impacts. Diversity and security of energy supply are also important considerations for a relatively small jurisdiction such as New Brunswick. Research has also improved the way we manage and administer the energy sector with innovative government policy, a strong regulatory presence and public safety requirements that continue to evolve based on emerging energy technologies.

The Province will establish a coordinated approach to facilitating research with respect to the sustainable and economic use of New Brunswick's natural resources, including natural gas, biomass, and wind, solar, geothermal, tidal and hydro. In addition, energy-related research and development activities in New Brunswick will focus on how residents, business and industry can reduce their use of energy through improved product standards and building codes, emerging energy efficiency and smart grid technologies, and cogeneration and district heating systems. This action item will leverage the Province of New Brunswick's existing commitment to implement a *Smart New Brunswick Plan*, taking full advantage of our post-secondary education institutions.

The Province will also complete an inventory of existing energy-related research and development activities in the province. The inventory will serve as the foundation for the development of a collaborative public and private-sector energy sector research and development strategy for New Brunswick, including the identification of target outcomes, funding mechanisms, areas for regional collaboration and partnerships, and opportunities for technology commercialization and the development of niche and sustainable energy sector cluster activities.

Key Objectives Served by this Action

Low and Stable Energy Prices – Energy technologies are constantly evolving and we need to ensure that New Brunswick residents, businesses and industry have access to new and emerging energy technologies that are commercially viable and provide tangible rate benefits.

Energy Security – Emerging clean and renewable energy technologies are increasing our province's diversity of energy supply and reducing our dependence on imported fossil fuel sources.

Reliability of the Electrical System – Emerging technologies such as smart grid have a direct impact on the reliability of our province's electricity system.

Environmental Responsibility – Emerging clean and renewable energy technologies are helping reduce the environmental impacts associated with energy production and energy usage here in New Brunswick and around the world.

Conclusion

The last comprehensive energy policy statement of Government was the *New Brunswick Energy Policy: White Paper*, released in 2001. It was intended to guide government action through 2010. Not only has it expired according to its terms, but it is clear that the energy landscape in New Brunswick and elsewhere has been significantly and fundamentally altered since its publication.

The New Brunswick Energy Blueprint therefore represents a timely, relevant and significant energy policy renewal. It is the logical next step to the process that was commenced by government in appointing the Energy Commission to weigh public priorities and recommend solutions. The Energy Blueprint is a vision and an action plan to work towards the objectives that were identified through the public engagement process of the Energy Commission.

The public release of *The New Brunswick Energy Blueprint* represents the adoption by government of a plan to move ahead on achieving key energy objectives. This will also give the Department of Energy and other key departments and agencies the necessary guidance to proceed with detailed planning, consultations, legislative and other actions to meet the objectives. The Energy Blueprint also provides clear direction to NB Power to further reduce its operating costs, implement a debt management plan, embrace demand side management and utility-based energy efficiency initiatives, and add a new level of public transparency to its operations. It is a major step forward for New Brunswick.

The Energy Blueprint includes an Energy Action Plan, which will be implemented over the next three years and result in further stakeholder engagement and consultations. There are many steps to follow, but the Energy Blueprint will be our Government's guide in shaping our energy future – a future based on:

1. Low and stable energy prices;
2. Energy security;
3. Reliability of the electrical system;
4. Environmental responsibility; and
5. Effective regulation.

The Government of New Brunswick, led by the Department of Energy, will introduce an energy report card to track progress in implementing *The New Brunswick Energy Blueprint*. Progress will be reported annually and will serve as a foundation for the Department's future public and stakeholder engagement efforts. *The New Brunswick Energy Blueprint* and associated action items will be reviewed and updated in three years or sooner, to reflect evolving government priorities and external economic, environmental and social factors. New energy sources are constantly being investigated while others are continuously being improved.

Given the rapidly evolving nature of global economic, environmental and social influences on energy supply and demand issues and energy markets, we cannot predict the future. However, our Government can establish progressive energy policies that optimize utilization of New Brunswick's natural resources and location advantages, with the objective of low and stable energy prices.

For additional information regarding *The New Brunswick Energy Blueprint*, please contact:

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Appendix A – Energy Commission Recommendations

No.	Page	Energy Commission Recommendation	Government Response to Energy Commission Recommendation
1.	17	Government should move toward establishing a process for funding energy efficiency programs by having the New Brunswick Energy and Utilities Board approve customer contribution rates based on efficiency program benefits for electricity, natural gas and heating oil buyers.	In 2012, a review of different funding models will be undertaken and recommendations will be presented to Government for consideration. Furthermore, Government will lead by example through continuation of investment in energy retrofitting and fuel switching for existing provincially owned buildings to improve their energy efficiency and reduce their energy consumption and associated carbon footprint.
2.	18	Government should ensure that future energy efficiency programs encourage the move to efficient central-heating systems for existing homes and businesses. The Government should work towards the elimination of baseboard electric heat as a primary source of heat in new construction.	Government will encourage greater adoption of central heating systems. This recommendation is addressed by Energy Action Plan Items 12, 13 and 14. Government will lead by example through the implementation of a policy which does not permit electric baseboard heating in new construction of provincially owned buildings, including major renovations to existing buildings.
3.	18	Government should amend the *New Brunswick Building Code Act* to give itself the ability to make amendments to the National Building Code by improving energy efficiency standards to promote lower energy costs and reduce demand.	Government will strengthen the building code to improve energy efficiency in new construction, as in Energy Action Plan Item 13.
4.	18	The Energy and Utilities Board should be given the responsibility to assess the economic benefits of efficiency programs before funds are provided from rate payer funds.	As part of the funding model review referenced in the Government Response to Energy Commission Recommendation 1, the Government will pursue the development of further regulatory oversight over efficiency program spending.
5.	19	Government should give priority attention to the creation of an energy efficiency program targeted at housing where the tenant is responsible for heating costs, especially in multi-unit buildings.	This recommendation will be reviewed by Efficiency New Brunswick.
6.	19	Government should promote the display of carbon emissions levels for vehicles sold in the province.	Government will explore the option of displaying vehicle emission data on new vehicles, and will support federal initiatives in this area.
7.	20	Government should continue to work with electricity sector stakeholders on developing smart grid applications that reduce consumer costs by enabling the delivery of innovative programs and services.	Government will be supporting smart grid development opportunities through Energy Action Plan Items 6 and 20.
8.	20	Government should direct distribution utilities to undertake programs that reduce demand at peak periods, including controlling water heaters and other appliances through targeted programming.	Government will be supporting this recommendation through Energy Action Plan Items 6 and 12.
9.	20	Government should also direct NB Power to establish a load shifting benefit-sharing program that would give customers who have the ability to reduce significant loads at peak times a benefit so the system can avoid the use of high-cost generation.	Government will be supporting this recommendation through Energy Action Plan Items 6 and 12. In addition, it should be noted that NB Power currently offers "interruptible" service to qualifying Large Industrial customers who can curtail all or a portion of their electricity use upon reasonable notice.

No.	Page	Energy Commission Recommendation	Government Response to Energy Commission Recommendation
10.	21	Government should direct NB Power to file an application with the Energy and Utilities Board to establish a second block for electricity billing for residential customers. This second block would have an increased price for electricity used. This would promote reduced consumption and reflect the added cost to NB Power to produce this additional electricity, tied largely to heating requirements. The price for the second block should be established at a cost allocation and rate design review. For the residential sector, the size of the first block should be large enough to cover needed use but small enough to promote conservation.	Government does not feel that this is an appropriate action to pursue at this time, given the high reliance on electric heat in homes and businesses and the significant impact an "inclining block" rate structure would have on many New Brunswickers.
11.	22	Government should encourage the need for an energy audit as part of the residential property transfer process.	Government supports this recommendation and encourages the use of energy audits in property transactions. This will be addressed as part of Energy Action Item 19.
12.	26	Government should amend its renewable energy certification standards in the *Electricity from Renewable Resources Regulation* to allow existing renewable facilities to be counted toward our renewable portfolio target and to encourage the development of additional renewable sources of electricity generation.	Government will amend its *Electricity from Renewable Resources Regulation* as a result of Energy Action Plan Items 7, 8 and 9.
13.	26	Government should direct that existing biomass facilities are included in NB Power's renewable portfolio at an established feed-in-tariff rate. The biomass feed-in-tariff should recognize its full benefits to New Brunswick residents and businesses, including availability, ease of dispatch ability and local job creation.	Government will recognize the value of some existing biomass resources in the province by increasing the Renewable Portfolio Standard (RPS) accordingly as in Energy Action Plan Items 7 and 8.
14.	26	Biomass in combined-cycle facilities should be a priority for future development based on a sustainable fibre supply.	Government will encourage the development of additional biomass combined-cycle generation through the development of additional renewable energy targets as in Energy Action Plan Items 8 and 9.
15.	26	The government should direct NB Power to incorporate all existing hydro-electric dams in New Brunswick as part of their renewable portfolio to allow comprehensive dispatch to support the overall system at a hydro feed-in-tariff.	Government will recognize the value of existing hydro resources in the province by increasing the RPS accordingly as in Energy Action Plan Item 8.
16.	26/27	Government should examine electrical system requirements through an Integrated Resource Plan with NB Power to determine future electricity requirements and options available to fill the need. As part of this, government should establish new, increased renewable electricity targets under its *Electricity from Renewable Resources Regulation* to reflect the defined opportunity to increase our renewable sources.	Government will require NB Power to submit an Integrated Resource Plan to the EUB as in Energy Action Plan Item 4. Government will increase the *Electricity from Renewable Resources Regulation* target as discussed in Energy Action Plan Items 8 and 9.
17.	27	Separate renewable energy capacity targets should be identified for provincial sources and for regional imports. Feed-in-tariffs should be considered as an option for local renewable energy sources and used to balance the need for developing opportunities and protecting the ratepayer.	Government will implement a program for Local and First Nations Small Scale Renewable Projects as described in Energy Action Plan Item 9. Government will also recognize the value of renewable energy imports, as articulated in Energy Action Item 8.
18.	27	Government should focus on establishing targets for addressing climate change that are in line with the rest of Canada.	Targets for GHG reductions will be established in the new NB Climate Change Action Plan, as discussed in Energy Action Plan Item 11.

No.	Page	Energy Commission Recommendation	Government Response to Energy Commission Recommendation
19.	27	Government should work towards establishing standards to ensure the quality and energy content of wood pellets and other pellets produced and sold in the province, promote the development of bulk delivery and storage systems and ensure sufficient supply is identified for this developing market.	Government will support the pellet industry as discussed in Energy Action Plan Item 10. Furthermore, generating hot water or steam for heating provincially owned buildings is one of the most economical means of expanding the use of renewable energy in residential, commercial and institutional buildings. Hospitals and Universities presently utilize in excess of 50,000 tonnes of biomass waste fuel annually. With fossil fuel prices at current levels, more refined biomass fuels such as wood pellets and high quality wood chips have become feasible alternatives for energy supply for buildings. Government will lead by example through the development of pilot projects which utilize wood pellet fired hot water heating systems. The Government will seek further opportunities to support local economies and reduce dependency on fossil fuels for heating its buildings through renewable energy supply agreements with the private sector.
20.	28	Government should develop a "Next Generation of Energy Group" that would counsel, advocate and facilitate the development of alternative energy projects with a focus on renewable energy.	These services will continue to be provided by the Department of Energy.
21.	28	Government should direct the Department of Energy to develop a centralized source of information for consumers, including Internet sites and demonstration projects.	Government will develop a centralized source of energy information through Energy Action Plan Item 19.
22.	34	New Brunswick should work closely at the regional level to establish relationships with our regional neighbours with a goal to optimize the use of existing and new generation and transmission assets through joint ventures that reduce financial risk.	Government will pursue enhanced regional partnerships where appropriate through Energy Action Plan Item 5.
23.	34	Government should pursue, wherever practical and economical, the joint operation of assets and sharing of reliability capacity, such as reserves, balancing, and coordinated economic dispatch, instead of building new assets.	Government will pursue enhanced regional partnerships where appropriate through Energy Action Plan Item 5.
24.	34	Government work to increase regional environmental performance and reduce emissions by expanding green and renewable energy generation sources, while identifying and working towards the retirement of fossil fuel units.	Government will be taking steps to improve our environmental performance and reduce emissions through enhanced regional partnerships, where appropriate, through Energy Action Plan Items 5, 8, 9 and 10.
25.	35	Government to work to improve and strengthen the regulatory regime for New Brunswick's energy sector while also pursuing greater regional regulatory cooperation.	Government will be improving the regulatory regime for energy through Energy Action Plan Items 1, 4, 15, 16, 17 and 18. Regional and national cooperation between regulatory agencies is achieved through normal liaison and associations such as the Canadian Association of Members of Public Utility Tribunals (CAMPUT). Each provincial regulator must however, by its quasi-judicial nature, act autonomously in relation to its deliberations.
26.	35	Government should work with NB Power and stakeholders to develop a long-term strategy and implementation plan to reduce excess capacity; optimize generating efficiencies and reduce costs; to reduce the utility's debt burden; and to improve financial performance.	Government will be supporting this recommendation through Energy Action Plan Items 1, 2, 3, 4, 5, 6, and 12.
27.	39	Government should consider using natural gas for residential, commercial and industrial applications, including the generation of electricity.	The Province of New Brunswick and NB Power will continue to use natural gas as a source of energy where it is feasible and economic to do so.
28.	39	Government should make changes to the cost structure of the natural gas distribution system to make natural gas more of an asset to New Brunswick, its residents and companies.	Government will be addressing the rate structure of natural gas delivery through Energy Action Plan Item 15.

No.	Page	Energy Commission Recommendation	Government Response to Energy Commission Recommendation
29.	39	Government should encourage and promote the use of natural gas in New Brunswick as a lower-cost option and a better environment tool compared to other fossil fuels.	Addressing the natural gas distribution rate structure through Energy Action Plan Item 15 may promote the increased use of natural gas in the province, by presenting consumers with a cleaner and more economical alternative.
30.	39	Government needs to expand the opportunity for residents to benefit from natural gas through different methods of transportation and distribution.	Access to natural gas in areas not already served depends on its technical and economic viability. The Province supports expanded distribution of natural gas and will work with proponents who pursue such opportunities.
31.	39	Government should create, in the regulatory framework for natural gas distribution, the flexibility to capture the benefits associated with our location, natural resources and access to natural gas. Government should also promote increased access to natural gas resulting from the application of new technologies.	As stated in the Energy Blueprint, New Brunswick has secure access to natural gas from several sources. The Province also supports the application of new technologies that provide economic access to natural gas and will work with proponents who pursue such opportunities.
32.	40	Government should ensure that the regulatory framework is updated to allow for the use of natural gas in a variety of forms (regular, compressed, liquid) and with different methods of distribution to create a sustainable benefit.	The Government supports the application of any transport method that provides expanded and economic access to natural gas and will review the regulatory framework as opportunities arise.
33.	40	Government should continue to pursue the potential of connecting the Maritimes and Northeast Pipeline with the TransCanada Pipeline in Quebec to create a more secure national system with supply options from the Maritime region, including liquefied natural gas, off-shore and indigenous supply and Western Canada.	Expansion of the national gas transmission network between Atlantic Canada and Quebec would benefit some areas of New Brunswick not currently accessible by pipeline. The Province would be in support of a national network, although current analysis suggests that, because of economic and market conditions, such a project would not be viable at this time.
34.	40	Government should undertake research to identify different cost-effective methods of using natural gas, such as in a district heat or fuel system, to provide energy options to interested groups, communities or industrial clusters. Government should examine the potential of establishing a natural gas fuel system to fuel the provincial fleet of vehicles (trucks, buses, cars) as a foundation for introducing natural gas as another fuel option for the provincial transportation system.	Government will focus on new and innovative energy technologies, systems and applications through Energy Action Plan Item 20. The Department of Transportation is leading Government's efforts to explore new and innovative fleet management systems, including emerging energy technologies and alternative energy sources. As technology becomes more readily available and affordable, the Department of Transportation will continue to conduct pilot projects in these areas.
35.	41	Government should establish an economic benefits program with special attention paid to supply-side requirements and a commitment to the development of educational institutes in line with the original off-shore agreements with Nova Scotia and Newfoundland and Labrador.	Business New Brunswick will lead Government's efforts relating to the supply chain development potential associated with emerging business sectors, including energy.
36.	41	Government should review the site location requirements for wind turbines and natural gas wells to ensure that all neighbouring property owners, including non-occupants, are not adversely affected.	The Department of Energy has published "Model Wind Turbine Provisions and Best Practices for New Brunswick Municipalities, Rural Communities and Unincorporated Areas". Government, led by the Departments of Environment and Natural Resources, is also developing an enhanced regulatory framework for the sustainable development of oil and gas resources.
37.	41	Government, as a further step in getting ready for potential development opportunities, should work to establish an off-shore-oil-and-gas agreement with the federal government to define the role of each government in the development of oil or gas resources off our provincial coasts.	Government, led by the Department of Natural Resources, will be seeking to resume discussions with the federal government in relation to the development of a joint offshore management regime.
38.	45	Government should maintain the fuel price regulation system in which the Energy and Utilities Board sets prices. Regular hearings to review margins should be held to maintain an understanding of the industry's cost structure.	This recommendation will be undertaken as part of Energy Action Plan Item 16.

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39.	45	There should be more regular public communication to explain the pricing method undertaken by the Board and the factors that influence change.	Energy literacy, including a better knowledge of regulatory issues and the role and mandate of the NB Energy and Utilities Board, is included in Energy Action Plan Item 19.
40.	45	Government should undertake a review of the home heating oil delivery rate system to ensure that low-income customers are not unfairly affected by the rise in oil costs and minimum volume delivery levels.	This recommendation will be undertaken as part of Energy Action Plan Item 16.
41.	45	Government must continue to examine alternative ways to provide public transit, especially in rural communities. Government should contribute to the development of public transit systems and transit systems for the differently-abled by providing fuel tax rebates to promote the creation of new services and enhance existing service with programs such as Park and Ride locations, fuel-efficient buses and expanded service.	Government supports the greater utilization of public transportation systems. Government, led by the Department of Local Government and supported by the Department of Transportation, will continue to work with existing transit operators in support of enhancing public transit and will develop a provincial transportation strategy to ensure accessible and affordable transportation for New Brunswickers, including people with disabilities.
42.	45/46	Government should examine providing funding toward the public transportation of high school age students to enhance the public transit system, where possible, as a cost-effective method of transporting students.	Government, led by the Department of Education, will explore further opportunities for partnering with local transit operators in the provision of student transportation.
43.	46	Government should examine the potential of establishing a natural gas fuel system to fuel the provincial fleet of vehicles (trucks, buses, cars) as a foundation for introducing natural gas as another fuel option for the provincial transportation system.	The Department of Transportation is leading Government's efforts to explore new and innovative fleet management systems, including emerging energy technologies and alternative energy sources.
44.	46	Government should work with the federal government to remove the requirement for non-petroleum based content in gasoline and diesel in New Brunswick until there is a viable and economic provincial source of non-food based biofuel available	The Province requested an exemption in relation to federal renewable fuels mandates. Ethanol blending in gasoline is however a current requirement for federal compliance. The federal government allowed a delayed compliance (2013) for bio-diesel blending as a result of the efforts of the Province and other stakeholders.
45.	46	Government should identify measures for reducing the consumption of transportation fuels, such as lowering the speed limit or promoting no-idling policies and communicate the benefits to residents to influence behaviour. Government should conduct an analysis to identify the costs and benefits of such policies, including money saved for consumers and the reduction of the provincial carbon footprint.	Government will enhance communications with the public on all energy matters, as discussed in Energy Action Plan Item 19. This specific recommendation is also supported by the Department of Transportation.
46.	46	Government should promote using teleconference options to reduce travel costs for public employees in order to cut down on the cost of traveling and subsequent demand for petroleum products which will reduce emissions.	Government encourages the use of teleconferencing where practicable for all public employees and has installed systems throughout government to reduce travel province-wide.
47.	48	Government should structure the New Brunswick Energy and Utilities Board to be a full-time professional board with a stronger mandate to consolidate expertise, be more efficient and reduce duplication.	Government is addressing this recommendation under Energy Action Plan Item 17.
48.	49	Government should look at expanding the mandate of the New Brunswick Energy and Utilities Board to encompass more of the regulated sectors similar to the approach followed in Nova Scotia, where insurance rates, water rates, planning and assessment appeals are included.	This recommendation will be reviewed by the Department of Energy and the Office of the Attorney General, but not as part of the current Energy Blueprint planning cycle.
49.	49	Government should establish a strong policy framework to direct the New Brunswick Energy and Utilities Board on the level of oversight authority.	Government will be supporting this recommendation through Energy Action Plan Items 1, 4, 15, and 16.

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50.	49/50	Government should establish a policy for the New Brunswick Energy and Utilities Board to impose financial threshold levels for regulated energy companies to receive prior approval with respect to capital spending or changes that affect long-term operational costs	Government will be supporting this recommendation through Energy Action Plan Items 3 and 4.
51.	51	Government should create an Office of the Energy Advocate to represent the interests of customers of regulated energy systems, including petroleum products	Government will be supporting this recommendation through Energy Action Plan Item 18.
52.	51	Government ensure that municipal electrical utilities are required to appear before the New Brunswick Energy and Utilities Board whenever they seek a rate increase that would be greater than the increase approved by the EUB for NB Power Distribution and Customer Service's wholesale rate.	Given that the bulk of municipal electric utilities' expenses are related to wholesale energy purchases over which the utilities have little or no control, and further, that all three municipal electric utilities currently serve their customers with rates equal to or lower than NB Power's rates, Government does not feel that this is an appropriate action to pursue at this time.
53.	52	Government should direct the Department of Energy to develop a centralized source of information for consumers, including Internet sites and demonstration projects	Government will support energy literacy, education and skills development initiatives through Energy Action Plan Item 19.
54.	53	Government should work closely with labour and management to create, within the building trades, the necessary flexibility, especially at the apprentice level, to allow New Brunswick to be competitive in the construction, installation and maintenance of new projects, existing facilities, and new technologies emerging in the energy field.	Government recognizes that there are opportunities for Apprenticeship and Occupational Certification (AOC) to evolve to meet the changing needs of industry in all sectors, including energy. AOC will support further training, certification and labour needs for this sector. Government will develop a workforce development strategy for the energy sector through Energy Action Plan Item 19.
55.	53	Government should encourage New Brunswick community colleges and universities to train and educate students who can play a strong role upon graduation in making the province a world leader in maximizing the value it receives from the energy it consumes and the energy sources available to it.	Government will support energy literacy, education and skills development initiatives through Energy Action Plan Item 19. In addition, Government will support the introduction of a pilot energy certificate program.
56.	53	Government should review its approach to ensure it has the proper regulatory structure to allow and encourage certification and training programs for the most effective application of energy-efficiency measures and alternative-heating sources.	Government will develop a workforce development strategy for the energy sector through Energy Action Plan Item 19.
57.	54	Government should establish, in cooperation with the universities, community colleges and other stakeholders, a coordinated approach to developing our energy sector's human and natural resources.	Government will develop a workforce development strategy for the energy sector through Energy Action Plan Item 19, as well as a research and development strategy through Energy Action Plan Item 20.
58.	55	Government should facilitate research and the application of technology to improve the responsible use of New Brunswick's natural resources and maximize the value received from the province's energy consumption through a defined strategy. Strong emphasis should be placed on supporting university-based research to attract top students to the energy sector.	Government will develop an energy sector research and development strategy through Energy Action Plan Item 20. The strategy will be developed in conjunction with our Government's commitment to implement a *Smart New Brunswick Plan*, taking full advantage of our post-secondary educational institutions.
59.	55	Government should encourage research and development that would identify new cost-effective and environmentally-progressive methods of using New Brunswick's natural resource opportunities, including natural gas, biomass, wind, solar, geothermal, tidal and hydro.	Government will develop an energy sector research and development strategy through Energy Action Plan Item 20.
60.	55	Government should encourage work on smart grid applications that reduce the cost of providing service to consumers. This should be considered a focal area for research support.	Government has reinforced its commitment to smart grid applications through Energy Action Plan Item 6.

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61.	55	Government should undertake research to identify different cost-effective methods of using natural gas, such as in a district heat or fuel system, to provide energy options to interested groups, communities or industrial clusters.	Government will develop an energy sector research and development strategy through Energy Action Plan Item 20.
62.	55	Government should work toward the establishment of standards to ensure the quality and energy content of wood pellets produced and sold in the province.	Government will support the pellet industry in the development of standards as discussed in Energy Action Plan Item 10.
63.	55	Government should identify measures for reducing the consumption of transportation fuels including alternative ways to provide public transit in rural communities and introducing alternative transportation fuels (natural gas).	The Department of Transportation is developing a transportation strategy that will address this issue.
64.	55	Government should work closely with labour and management to create within the building trades the necessary flexibility, especially at the apprentice level, to allow New Brunswick to be competitive in the construction, installation and maintenance of new projects, existing facilities, and new technologies emerging in the energy field.	Government will develop a workforce development strategy for the energy sector through Energy Action Plan Item 19.
65.	55	Government should, as part of the development of any energy-related legislation or regulations, undertake an economic impact test to identify the costs associated with the proposed measures. This is especially important for costs imposed on products sold in the export market.	The economic impact of energy regulatory proposals is currently considered in Energy Action Plan Items 1, 2, 3 and 4. Appropriate economic impact analysis will be undertaken during the implementation of the Energy Blueprint and future Energy Action Plan components.
66.	55	The results of research and development efforts should be made available to New Brunswickers in a timely fashion to ensure they can benefit fully from this research and development.	Government will develop an energy sector research and development strategy through Energy Action Plan Item 20.
67.	55	Government should look to associate a source of financial support to research and development from an economic benefits program associated with oil and gas development on land or offshore.	Government will develop an energy sector research and development strategy through Energy Action Plan Item 20. The Departments of Natural Resources and Business New Brunswick are also developing strategies to optimize the economic benefits associated with the sustainable development of oil and gas resources.